

and Memelland. In the "Government General" rationing is decreed by the German administration on a discriminatory basis for the sole purpose of squeezing as much food as possible out of that area for the Reich. In all the other countries of Ring I, rationing is controlled by the national administration. There is no attempt to equalize rations between these occupied countries. Hence the rations and to a greater extent the availability of rationed foods differ widely. And as time goes by the differences alter. Denmark and Holland, for instance, have enjoyed a food situation that for several years was better than that in the "Greater Reich." Bohemia and Moravia fared as well as the Reich. The urban populations of Belgium and Norway had to endure the greatest hardships. The outer rings, except for the eastern part of Ring III, are left entirely to themselves so far as the distribution of available supplies among urban populations is concerned.

Europe's Agricultural Output under Nazi Rule

What, then, actually happened to agricultural production inside the nazi-controlled *Festung Europa* during the first four years and four months of war? If popular opinion in the United States and Great Britain were correct, European agriculture would have been in a most deplorable condition, its productive plant so far depleted, its output so shriveled that its restoration would demand truly gigantic efforts on the part of the United Nations or decades of gradual recuperation. This public opinion is formulated on the basis of a piecemeal collection of thousands of detailed news items reported in the press and in magazine articles, from which a misleading composite picture is unconsciously drawn. It is bound to be worthless, however satisfying to look at, because there is neither a gauge for the validity of the reported observations or the representative nature of the sample nor any guidance for measuring their weight or real importance.

Fortunately for everyone concerned, especially the victorious nations when war ends, we have a great body of evidence indicating that the actual agricultural situation on the Continent behind the blockade is different from what uninformed conjecture suggests. While it is far from the prewar norm, and far from a generally or wholly satisfactory state measured by modest wartime desires of all consumers, nevertheless Europe's agriculture is far from disastrous decay. The most comprehensive effort to estimate the output of food

The
RECONSTRUCTION
OF WORLD
AGRICULTURE

By

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चौड़ा रास्ता जयपुर

with a low income had to live on a diet in which up to 80 per cent of all calories were derived from starchy foods.

Closer investigation shows that there are great variations even within the composition of the nonstarchy part of the menu among the nations with a more advanced diet. To the extent that people can afford to pay more for a better diet, the more variety they will seek and the greater numbers of them will shift from an outdoor life or hard physical work to lighter and sedentary occupations, and the more they will include in their diets highly digestible types of food, and food in which all the nutrients are well balanced.

The international review of the various national diets at a certain date represents, of course, only a contemporary cross-section of a long historical process of dietary change. One hundred years ago the diet of the American, British, or the German people was much closer to that of the Russians or Poles today.

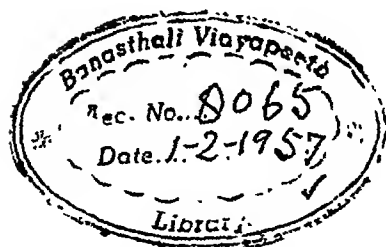
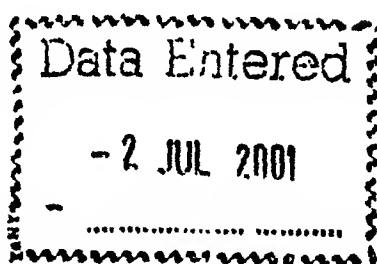
The chief dietary changes bound to take place as the average per capita real income rises are the following: (*a*) the total intake of carbohydrates declines, but as it declines, more starch and less sugar are consumed; (*b*) the lesser intake of carbohydrate calories is made up by the ingestion of more animal and vegetable fats; (*c*) vegetable proteins are replaced by animal proteins and the consumption of protein is enlarged; (*d*) more vegetables and fruits are consumed in greater variety during an increasingly extensive period beyond the local field harvest season.

The same tendencies which cause these global shifts are responsible for a great many subsidiary shifts which operate within the framework of the major trends. Greater palatability and digestibility are the chief qualities sought by consumers whose changed working and living conditions make their metabolism less robust. Among occidentals, some of these changes consist of an increasing demand for the meat of younger, better-fed animals; more poultry meat and eggs; more milk, cream, butter, and cheese; more eggs and butter in winter-time; more fresh and canned fruits, fewer dried fruits; more fresh and canned vegetables. When these trends are operative more refined processing and storage take place, and more food is wasted in the kitchen and on the dinner table.

It is important to realize that these dietary shifts are powerfully accompanied by two key factors—(1) the improvement in real income which results from the process of the so-called industrial revo-

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DEDICATED
TO THE MEMORY OF
FRIEDRICH AEREBOE
of Germany
INSPIRING TEACHER, FATHERLY FRIEND,
CHALLENGING COLLEAGUE—
A GREAT EUROPEAN

*He either fears his fate too much,
Or his deserts are small,
That dares not put it to the touch
To gain or lose it all.*

—JAMES GRAHAM,
Marquess of Montrose (1612-1650)

Foreword

THIS book concerns one important aspect of the great challenge of our time to the nations of the world and their statesmen: how shall a more durable and vital peace be built? Some thirteen hundred million people of this earth still live as farmers. Their well-being will be seriously affected by the knowledge possessed by the builders of the peace about a sound and sane reconstruction of the world's agriculture.

Since the United States is the world's leading power and international policy in any case begins at home, special emphasis has been laid upon our obligation to adopt a bold economic policy in behalf of our own interests as well as in behalf of the prosperity of the world.

The book has grown out of the continuous observation and critical analysis of the present war's impact upon the world's food economy being conducted at the Food Research Institute. Intensive study of the intriguing and complex ways in which war interferes with peacetime pursuits in agriculture and of the recuperative power of farming inevitably leads to an evaluation of the reconstruction job facing the nations when the war is won. Not to make the product of such thought available to others who, as statesmen, businessmen, and economists must form a considered opinion on this subject, would constitute a sin of omission.

Yet the book owes its existence to the urgent proposal of its publisher, W. W. Norton, and to his success in persuading the author to write on so vast a subject at a time when the pattern of the future political and economic world is discernible only in hazy outlines.

Primarily, the book was written in order to contribute to public discussion some pertinent factual background as well as argumentative interpretations of various national and international policies, which may further the restoration of agriculture to its normal role in an era of peace.

The author alone bears the responsibility for the content of the

book, and for any errors or defects which may appear in it. At the same time, he wishes to acknowledge his indebtedness to those persons who either read the manuscript in its various stages, in whole or in part, or who have otherwise contributed their helpful criticisms and observations to it: Kenneth E. Boulding, Economist, Iowa State College; F. F. Elliott, Chief Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture; D. Crena de Iongh, Chief of the Dutch Mission in the United States for the Netherlands Indies, Curaçao, and Surinam; W. W. Norton, President, W. W. Norton and Company; Leslie A. Wheeler, Director, Office of Foreign Agricultural Relations, United States Department of Agriculture; and Helen C. Farnsworth, Pavel P. Egoroff, and Vladimir P. Timoshenko, colleagues of the author in the Food Research Institute.

Special acknowledgment is made to two staff members of the Food Research Institute: to Rosamond H. Peirce, for assistance with portions of the statistical work; and to P. Stanley King, for construction of the charts and maps.

The author is especially grateful to his secretary, Dorothy Adams, who has untiringly co-operated and assisted in every phase of the work, and without whose share in it the book would never have reached the press.

KARL BRANDT

Palo Alto, October 1944

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The Effects of World War I upon World Agriculture

As it always was, agriculture still is one of the basic elements of the world's economy, and holds one of the keys to the greatest obligation of all nations immediately after this war, that of wise and energetic reconstruction. An early general orientation is mandatory for agricultural reconstruction itself; but such analysis promises also to yield important guideposts for reconstruction policies in other fields.

A critical study of the economic effect of military events upon agriculture between 1914 and 1918 will reveal, if nothing else, some understanding of the immediate and secondary effects of modern war upon agriculture and the world's economy of food and fibers. It promises also to reveal to what extent the reconstruction of normal life in cities depends upon agricultural reconstruction.

War by Naval Blockade

World War I affected the Great Powers directly, and all nations indirectly, but except for the siege of Tsingtao and some minor fighting in South Africa, military action on land was confined to the European Continent and the Levant. Except for some zeppelin cruises to London and Africa, aerial warfare was confined to the zones of land combat. Naval warfare alone swept all the seas when that war broke forth without warning.

None of the belligerents had made really adequate economic preparations for a long or global war. Despite much military preparation for blockade and counterblockade, none of the administrative or general staffs had even grasped what several years of war could do to a modern economy. On neither side had military experts much concerned themselves with economic planning nor the administrative problems of a centrally controlled war economy. Attack upon

foreign resources and the immediate supply of the armed forces was more or less the sole concern of military strategy. Proof of this was the haphazard way in which the German war ministry reluctantly adopted an idea proffered by Walter Rathenau, a civilian, for creating a war raw-materials board during the war, and the dismal failure of the German war food administration to manage or control the nation's food resources.

Planned economy as we know it was unheard of, even among professional economists. Toward the end of 42 years of peace, it was generally assumed—especially in Germany—that due to the destructive power of offensive weapons, a war could not last more than several months or, at most, a year. Indeed, although the political atmosphere had been charged with high tension as early as 1906 and the international race for heavier armament and longer service of standing armies was on, none of the European importing countries entered the war years with any reserves of food or raw materials worth mentioning. The war broke out at the close of the main harvest season for grain in Europe; but there is no evidence whatsoever that this was due to deliberate planning on either side.

However, when the prospect of a protracted war of attrition loomed, economic planning was introduced—reluctantly and with half-hearted improvisations. Very gradually centralized controls were imposed on one branch of the economy after another. At the war's end few of the central controls had become comprehensive, still fewer fully effective. None were well co-ordinated. This held for the defeated Central Powers quite as much as for the Allies, despite all the remarkable progress made on both sides as compared with their starting point in 1914.

The war on land left the Americas, Asia, Malaysia, Oceania, and Africa practically untouched. The British Isles were hit by zeppelin raids on London, but otherwise did not suffer from direct war action. On the Continent, Norway, Sweden, and Denmark, Holland and Switzerland, Portugal and Spain, remained neutral. Only a small strip of Germany's territory, in East Prussia, was ever invaded, and that during the first few weeks of the war. Otherwise the country remained almost free from direct war damage, except for slight occasional bombing of some western towns. The same situation held for the Austro-Hungarian monarchy. The great battles of artillery and trench warfare were fought on a more or less stationary front

in western Belgium and 10 *départements* of northeastern France. The front in northeastern Italy was similarly stationary. In the east, however, mobile warfare ranged from the German border to the Ukraine and, since Bulgaria and Turkey were fighting on the side of the Central Powers, over the eastern Balkans, Anatolia, and Palestine, finally reaching Mesopotamia and Egypt.

The war was fought with the economic weapon of blockade and counterblockade. By means of her U-boat campaign, Germany attempted to starve Great Britain and to cut the Allied force in France from overseas supplies and from the British Isles. The Allies replied with naval warfare which kept the British Isles provided with food and feed, supplied the Belgian, French, and British troops in France, and made possible the shipment to France of more than 2,000,000 soldiers, and kept all armies well supplied. Subjecting the whole area belonging to the Central Powers to a stringent counterblockade, the Allies managed to close Germany's access to the seas.

Germany and her allies were defeated first at sea and ultimately beaten decisively in the battles at the Western Front during the summer of 1918, while in the east they had the war won when revolution came to Russia. Germany's military defeat was preceded and accompanied by depletion of civilian food supplies and complete economic exhaustion.

The Allies won the war, but not without having undergone a most critical food shortage in Great Britain in May, 1917, at the height of the submarine war. The decision in their favor was indisputably the result of the merger of the military striking power and the superior economic resources of the United States with those of the Allies in 1917.

An outstanding economic aspect of World War I was the gradual division of the world into two compartments: one was a contiguous central and eastern European Continental block under the rule of the Central Powers; the other, the domain of the Allies, consisted of the rest of the world, all the oceans, and a broad, safe bridgehead in western and southern Europe. During the course of the war the large Continental economy under German rule gradually deteriorated while the world-wide resources of the Allies so much further expanded that the handicap of shipping and heavy losses on submarine-infested oceans was overcome, and the abundance of supplies and manpower made final victory inevitable.

Agriculture on the Eve of World War I

As one of the basic industries supplying food and feed, fibers and industrial fats, and representing a large reserve of manpower, agriculture had its full share in the course of events on both sides. Beyond that, agriculture in every distant corner of the world—no matter whether in neutral, nonbelligerent, or belligerent territory—was the more affected by the war as it participated in international trade.

In 1913, the last prewar year, when Germany celebrated the centenary of Europe's and her own liberation from Napoleonic tyranny, the world's agriculture reached a peak of international co-operation and division of labor. Despite the existing obstacles of import duties in various countries, agriculture in the western and central parts of the Continent had adapted itself to the trend of an ever-increasing demand for animal products and the availability of low-priced grain and high-protein feedstuff from overseas and from Russia. Denmark and Holland were the outstanding examples of this tendency. However, Belgium, Germany, France, Sweden, and Switzerland had gravitated toward greater emphasis on production of higher-priced animal products, and wherever climate permitted, fruits and vegetables.

This trend was marked by a gradual but steady decline in the acreages of rape, mustard, flax, and poppy, a decrease in the land in fallow, and a consequent decrease in the number of sheep, and an increase in the acreages for potatoes, corn, and other heavy-yielding hoe crops. At the same time, the yield of grain crops improved, and ever-increasing parts of the grain and potato crops were fed to cattle, hogs, and chickens. These changes were the result of intensification in European farming, i. e., the increased application of management, labor, and capital per unit of land and a resulting increase in output. More fertilizer, more draft power, deeper plowing, more machinery, better seed, better breeds, more productive buildings and other improvements applied with improved management and scientific guidance made possible higher and steadier yields of crops. The high demand and premium prices for animal products, and the larger output of vegetable matter encouraged farmers to increase their livestock herds as crop production advanced.

This impressive progress in agricultural and economic techniques on the Continent was by no means shared equally by all nations. It

depended upon co-operation among all the factors which influence the advancement of a major partition of the food economy in each country. Most important are the coexistence of an agricultural population with a high degree of professional skill, enterprise, and managerial ability; long-term credit at low interest rates; competent industries supplying farm equipment and other needs; and a highly developed, self-governing co-operative or other public service agencies for agriculture.

A few data on Germany may illustrate the evolution.¹ From 1878 to 1912 Germany's crops rose as follows: rye, from 6.9 million metric tons to 11.6 million metric tons; wheat, from 2.6 to 4.4 million metric tons; oats, from 5.0 to 8.5 million metric tons; barley, from 2.3 to 3.5 million metric tons; and potatoes, from 23.6 to 50.2 million metric tons. These increments in crops were accomplished partly by increased acreage, but to a considerable extent by better yields. The yield per hectare increased as follows:

rye, from 11.7 to 18.5 quintals
wheat, from 14.4 to 22.6 quintals
oats, from 13.5 to 19.4 quintals
barley, from 14.3 to 21.9 quintals
potatoes, from 86.0 to 150.0 quintals

During the same 35 years the cattle herd increased from 16 million to 20 million head, and the pig herd from 8.2 to 22 million head.

The Danish record of agricultural production is still more impressive. The five-year average of all crops expressed in barley equivalent was around 27,000,000 tons in 1875-79, and no less than 74,000,000 tons in 1926-29. In 50 years production increased to three times its initial volume, while the cattle herd was doubled, the pig herd rose to more than six times, the chicken flock to four times, their former size.²

Zones of Intensity for European Agriculture

The zones of agricultural intensity and highest utilization of agricultural resources center around the delta of the Rhine. Holland,

¹ Friedrich Edler von Braun, *Die Hebung der landwirtschaftlichen Produktion als Grundlage des deutschen Wiederaufbaus* (Finanz und volkswirtschaftliche Zeitfragen, Berlin, 1921), vol. LXXVIII, p. 3.

² Königlich Dänisches Ministerium des Äusseren, *Dänemark 1931* (Kopenhagen, 1931), pp. 72-74.

Belgium, Denmark, and northwestern Germany, in that order, surpass all other parts of Europe in crop yields, use of fertilizer, and number of livestock units per acre. Switzerland, the rest of Germany, Austria, and Czechoslovakia rank next, while the western, southern, and eastern parts of the Continent show a lesser and lesser intensity of agricultural land utilization.

These zones of intensity were more or less an expression of economic conditions in general. The urban food market, where the population was rapidly rising and the income of the people constantly improving, existed only where the wheels of industry were humming. In this market sufficient purchasing power was spent to absorb the increasing amounts of food, particularly the more costly high-grade perishable commodities. The hub of agricultural prosperity on the Continent lay in the most industrialized parts of Europe, foremost in Belgium, northeastern France, and Germany. The more highly accentuated demand of the industrial areas of England for high-quality food, to the extent that it was not supplied from overseas sources, added outlets for agricultural produce from countries such as Holland and Denmark.

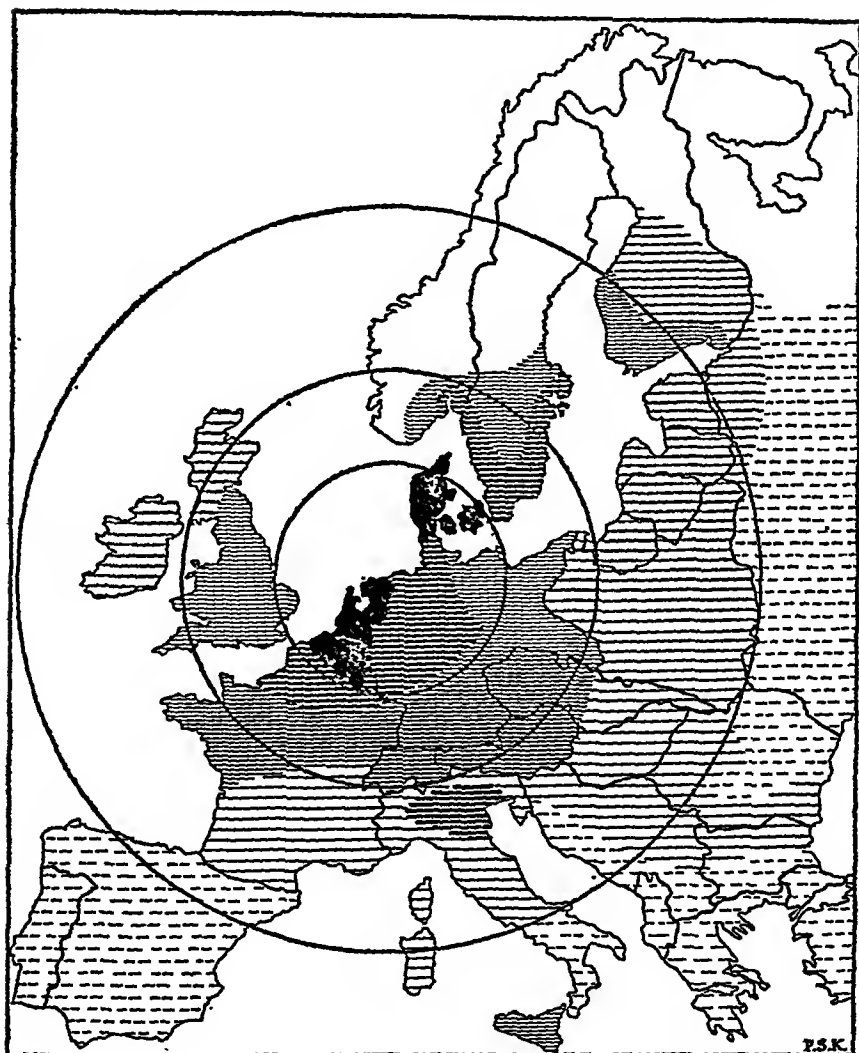
When World War I broke on August 1, 1914, European agriculture did not differ essentially in geographical distribution of zones of intensity, in technical advancement, or in standards of efficiency, from the position it held at the outset of World War II, 25 years later, although some further progress had been made.

For the period preceding World War I, due to the moderate and remarkably stable import duties and the maintenance of tariffs most of which were bound by multilateral treaties, the progress of agriculture in various countries was accompanied by and directly related to sizable imports of staple products from the less-developed agrarian sections of Europe, particularly the Balkans and Russia, and from overseas.

Grains.—Continental Europe, excluding Russia, produced in the prewar period 1909–13, an annual average of 102,000,000 tons of grain, i. e., wheat, rye, barley, oats, and corn, and imported an additional 14,000,000 tons, or 12 per cent of total consumption. During the same period tsarist Russia produced 75,000,000 tons of grain and exported 10–11,000,000 tons of it to Continental Europe. Thus, 3–4,000,000 tons, or only 3 per cent of the Continental consumption

CHART I

ZONES OF INTENSITY IN EUROPEAN AGRICULTURE



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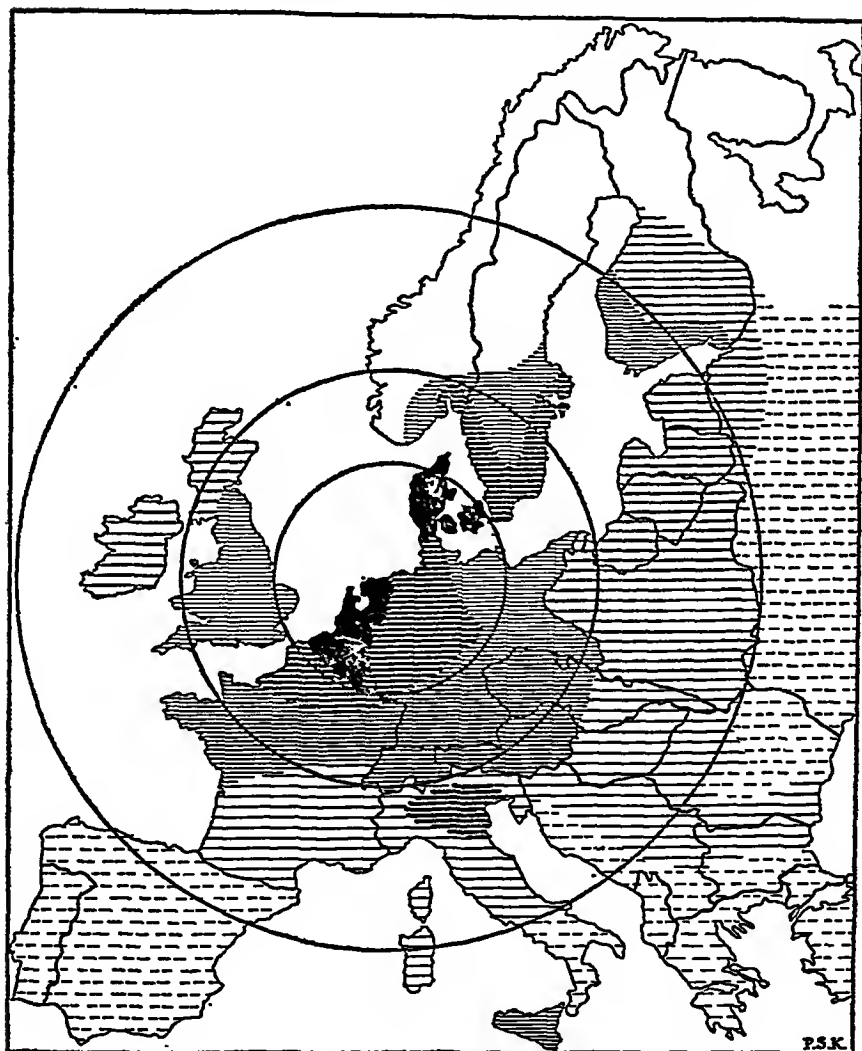
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of grain was supplied from overseas. The dominant position of Russia's exports for the pre-World War I supply of the Continent deserves special notice.

Great Britain and Ireland produced only 6,000,000 tons of grain, but imported 10,000,000, or more than two-thirds as much as the entire Continent without Russia. Aside from what was received from Russia, British and Irish import requirements as well as those of the Continent were supplied by the United States and Canada on the one hand, and from countries of the Southern Hemisphere on the other, namely, South America, Australia, and South Africa. The two North American exporters supplied an average of 6-6.5 million tons; those from the Southern Hemisphere about 7.5 million tons.

TABLE 1

CHIEF AREAS OF ORIGIN AND DESTINATION OF GRAIN *
IN THE WORLD'S FOREIGN TRADE, 1909-13 †

(million metric tons)

Country	Net Exports	Country	Net Imports
Russia (including Siberia)	10.5	Continental Europe (excluding Russia)	13.7
United States and Canada	6.4	United Kingdom and Ireland	10.0
South America, South Africa, and Oceania	7.5	Other areas, and statistical margin	.7
Total	24.4		24.4

* The term *grain* covers the four small grains wheat, rye, barley, and oats as such, as well as their equivalent in the form of flour and also corn.

† Statistics from International Institute of Agriculture, *International Yearbook of Agricultural Statistics* (Rome, 1922).

Aside from the receipts of the five grains, the European Continent received net imports of 1.2 million tons of rice from Asia. For the five grains and rice combined, the Continent excluding Russia depended up to 12.8 per cent on imports from Russia and overseas in its prewar requirements for seed, food, feed, and industrial use. However, it must not be overlooked that the Continent and Russia combined received only 1.8 per cent of their total consumption of the six grains through overseas imports.

The statistical unit of the Continent excluding Russia consisted by no means just of countries which consumed imported grain and flour

from Russia and overseas besides their own grain. The Danubian basin, including Rumania, Croatia, and Slovenia, exported in 1909-13 close to 5,000,000 tons of grain to the central and western parts of the Continent.

A global survey of the Continental grain supply before World War I must consider the potato crops. Potatoes are to Europe what corn is to the United States and Argentina, with the difference that while corn is used essentially as feed, one-third or more of the potatoes in Europe is used as food. Potatoes are, moreover, a feed and industrial carbohydrate. In the European food-and-feed economy, potatoes figure as grain equivalent. Four to five tons of potatoes have the energy equivalent of one ton of wheat, rye, barley, or corn. In 1909-13 the Continent produced potatoes equivalent to 18-23,000,000 tons of grain. Russia produced 7-8,000,000 tons of grain equivalent in the form of potatoes. If one considers these additional supplies of basic energy-bearing food and feed, it becomes apparent that the Continent as a whole was dependent only to a small extent upon imports, so long as its own agricultural production could be maintained. Of course, the grains and potatoes represent only a segment of the food-and-feed economy, although an important one.

Livestock.—Animal husbandry occupies the next important key position. Table 2 shows the distribution of the world's livestock herd among the major areas in 1911. The large numbers of horses in Russia

TABLE 2

GEOGRAPHICAL DISTRIBUTION OF THE WORLD'S LIVESTOCK, 1911 *

(million head)

Area	Horses	Cattle	Sheep	Goats	Pigs
Continental Europe, excluding Russia					
Russia	17.3	78.4	90.8	20.3	57.7
Russia, including Siberia	34.6	51.6	66.0	2.0	14.1
Great Britain and Ireland	2.2	11.9	30.5	...	4.2
North and Central America	24.7	74.1	57.5	5.1	71.9
South America	18.4	80.6	115.8	17.5	23.6
Asia, excluding Russia	9.2	149.1	79.9	50.8	84.5
Africa	1.5	23.2	60.2	30.5	2.6
Oceania	2.7	14.0	117.1	.3	1.5
Total	110.6	482.9	617.8	126.5	258.4

* Data from *International Yearbook of Agricultural Statistics* (Rome, 1922).

and North America indicate that traction power for farming was at that time still derived almost exclusively from draft animals. Horses compete with man for food acreage. Aside from its use of hay which otherwise dairy cows could convert into human food, one horse consumes 5 to 10 times as much grain in a year as does the heartiest bread-eating man.

Cattle produce milk, veal, and beef from succulent feed materials rich in cellulose; therefore, the condition and size of the cattle herd is another measuring rod for the productivity of agriculture. This does not hold for the 150,000,000 head in India because religious taboos prohibit their efficient use and improvement. In Europe, Russia, North and South America, and particularly in New Zealand and Australia the great cattle herds are a vital structural component of the entire system of land utilization.

TABLE 3
DENSITY OF LIVESTOCK IN 1911 *
(number of animals per 1000 inhabitants)

Area	Horses	Cattle	Sheep	Pigs
Continental Europe, excluding Russia	63	288	334	212
Russia, including Siberia	211	315	403	86
Great Britain and Ireland	50	262	674	94
North and Central America	199	598	460	571
South America	380	1,527	2,447	447
Asia, excluding Russia	10	158	85	90
Africa	23	311	811	35
Oceania	402	2,033	17,143	216
World total	67	291	390	201

* Data from *International Yearbook of Agricultural Statistics* (Rome, 1922).

Table 3 indicates how the great wealth of Argentina's and Uruguay's agriculture arose from their high production of beef, a large proportion of which always went to the English market. The European Continent imported relatively small amounts of meat from overseas. Not only European but all cattle herds live principally on domestic feed materials such as grass on pastures, straw, wild and tame hay, a great variety of fodder crops from arable land, and the by-products from beet-sugar factories, distilleries, and breweries. Cattle are necessarily dependent on domestic feed because it is their

main function to convert inedible, bulky, and low-cost materials not easily transported over long distances into high-priced, edible materials. However, the concentration of protein contained in such "absolute" cattle feed is usually too low for its efficient utilization.

Fats.—In countries where the beef and dairy industries were highly developed, farmers made increasing use of concentrated feed materials, a part of which was imported from overseas. Such materials consisted mainly of millfeed, a by-product of imported bread grain and of the meal and cake of oilseeds. This use of foreign feed was, however, only an adaptation to one of the most remarkable trends in European agriculture which continued for more than 40 years preceding World War I. The British Isles as well as the more industrialized parts of the Continent gradually reduced the acreage devoted to oilseeds and dry beans, peas, and lentils in their crop systems, and imported their increasing requirements of vegetable fats in the form of oilseeds from Asia, Africa, and South America. The oilseed-crushing industries sold their vegetable oils to the margarine, shortening, and oil-paint industries, and the meal or cake to the dairy and cattle farmers. In 1909-13 Europe consumed approximately 2.2 million tons of vegetable oils, of which 700,000 tons were domestically produced, 1.5 million tons imported.³ This import of oils carried with it the probable volume of 2-2.5 million tons of high-protein meal. Some oil cake was imported as such. To the extent of this protein import, the Continent's cattle industry depended on foreign supplies. The division of labor between European dairy farmers and the oilseed planters or collectors in Africa, Asia, and South America made the Continent even more dependent on imported fats, because a part of the output of butterfat produced on the Continent as well as on the British Isles was produced with foreign oil cake. This was also the case with a part of Europe's pork and lard and its poultry and egg production, which depended on imported feed grain.

This use of imported feed raw materials by the astute livestock farmers in countries such as Denmark, Holland, Belgium, Germany, and Switzerland developed so well for the simple reason that it was good business. It enabled them either to sell more high-priced products in the domestic market, or to export them at good prices within

³ International Institute of Agriculture, *Oils and Fats: Production and International Trade, Part I* (Rome, 1939), p. 342.

the Continent or to the British Isles. The Continent excluding Russia was thus, in 1909-13, a net exporter of 105,000 tons of butter, and ranked much higher than any other area. Russia exported net 68,000 tons, Oceania 52,000 tons, Asia and Africa 12,000 tons, and North and South America only 2,000 tons. Nearly all of these exports found their market in the British Isles, where net imports reached 207,000 tons.⁴

Almost one-half of the 250,000 to 300,000 tons of butter exported originated in the Netherlands, Italy, Switzerland, and Denmark, while New Zealand and Canada contributed the rest. Great Britain, Germany, the United States, and Belgium were the chief importers, the major part going to Great Britain.

Great Britain and Germany absorbed also the great bulk of eggs exported from various parts of the Continent, Russia, China, and other overseas countries.

A different division of labor prevailed in the foreign trade of lard. If the intra-Continental total exchange in Europe is ignored, the United States was the only exporter of importance. In 1909-13, 280,000 tons net of American lard were exported to Europe. Of this amount 120,000 tons went to England, the rest to the Continent, where Germany was the chief consumer.

Argentina and Uruguay, New Zealand and Australia exported during the same period 210,000 tons of tallow and grease to Europe. Three-fourths of it went to the Continent, one-fourth to England.

For the purposes of the present discussion—the impact of World War I upon the world's agriculture—it would far exceed the bounds to attempt to make a survey of the whole maze of the world's trade in agricultural commodities. A few more of the main links between the principal areas of food production and consumption, and of the exchange of key raw materials might well be indicated.

Meat.—Considerable trade existed in meat which was shipped either as meat or as "meat on the hoof," namely live animals, where the ocean routes were not too long.

Tropical Products.—Through their excellent and partly exclusive ability to produce materials such as cane sugar, coffee, tea, cocoa,

⁴ Data from International Institute of Agriculture, *Oils and Fats: Production and International Trade, Part II* (Rome, 1939), pp. 30-37.

jute, hemp, sisal, natural rubber, and various medicinal products, among them quinine, the tropics were linked with the world's agricultural trade. No less than 159 different countries and territories participated in the prewar sugar trade. Europe depended largely on its own production of beet sugar, some of which was exported to Great Britain. The United States and Great Britain bought cane sugar from Hawaii, Cuba, Puerto Rico, the Philippine Islands, and the Dutch East Indies. Coffee came from Central and South America, which competed with much smaller production from the Dutch East Indies and several African areas. They sold their product mainly to the United States and the European Continent. Tea was exported by India, Ceylon, China, the Dutch East Indies, and Japan, and sent to Great Britain, Russia, the United States, and Canada. Cocoa was produced chiefly in South America, the Caribbean, and along the African Gold Coast, and went to Europe and the United States.

Fibers.—A similar pattern of widely scattered sources with different centers of gravity is true of the fibers. The great centers of wool exports were located in the Southern Hemisphere with Australia and New Zealand, Argentina and Uruguay, and South Africa in the lead; India, China, and some minor countries followed. Principal buyers of this wool were Great Britain, France, Germany, the United States, and Belgium. Most of the world's cotton was supplied by the United States, British India, and Egypt and sent to Great Britain, Japan, Germany, France, Italy, Russia, and many smaller buyers. Silk was exported by Japan and imported by the United States, France and others. Jute, the lowliest of all fibers, was also produced almost entirely in Asia. India supplied Great Britain, Germany, and the United States with most of this material for sacks, rope, and twine. Hemp for Great Britain, the United States, Japan, and Germany, was exported by the Philippines, Italy, and India.

Rubber did not represent a very impressive volume of international trade. In 1909-13 no more than 81,000 tons figure as net exports. In 1944 this may seem astounding. More remarkable yet is the fact that during that period South America exported more than twice as much as Africa, and Africa more than Asia.

Wood, Hides, and Skins.—In Europe, wood and wood pulp were exported from Scandinavia, Russia, and the Balkans to Great Britain,

the western and central Continent. Wood was exported from Canada to the United States, and from there to various countries in the Pacific. Hides and skins for Germany, the United States, Great Britain, and France were exported by Argentina, Uruguay, Brazil, Canada, Australia, New Zealand, and British India.

A Co-operative Communicating Food World

This bird's-eye view of the world's agricultural situation at the beginning of World War I suggests some conclusions. A long era of peace, stability, and flourishing international trade in industrial goods as well as raw materials, resulted in long and great progress in the wealth of the industrial nations' agriculture. Domestic markets for high-priced products expanded, and access to inexpensive feed-stuff from overseas was easy, because capital flowed freely from country to country. At the same time, overseas agricultural exporters found both in England and on the Continent a good market not only for low-priced staples, but also for expensive animal products such as meat, butter, and lard.

This demand indicated that the pace of industrialization in Europe was swifter than the intensification of agriculture. Hence, European farmers could prosper and still leave a fair share of the trade for farmers in Russia, in Argentina and Uruguay, in New Zealand and Australia, in the United States and Canada, in South Africa, and in the insular sections of Asia and Manchuria. In fact, British, Dutch, German, and French capital was invested in or loaned to agricultural export countries overseas in view of the advancing demand in Europe.

Peace, stability, and security in the leading countries of the world had fostered a remarkable degree of international division of labor and economic co-operation among nations. Despite import duties and protectionism, the consumers in the great industrial countries could enjoy the benefits of world-wide utilization of resources for food and raw materials through the convenient medium of trade. Indeed, that amazing rise in the plane of living could never have been achieved had not the physical, technical, and human resources of the most distant lands been brought into play to provide the physical goods. Nor could colonial and preindustrial zones have ever been opened up and developed had not the more advanced nations in the world pro-

vided the capital, the machines, and even the manpower to begin or improve agricultural production or shipping facilities.

Under the circumstances, the progress made was a reasonably fair beginning toward improvement of the real income of the people in all countries. Foreign trade had managed to bridge the gap of short crops in import countries, and to banish from the more developed parts of the world the recurrent famine which had always plagued humanity. Foreign trade had opened up zones and climates to areas which, in the absence of a local demand for the produce, could never have been used. At low cost, foreign trade had brought more and more variety, palatability, and nutritive qualities into the diet of the people in the western world. Moreover, as the expanding manufacturing industries developed a greater need of more raw materials, foreign trade had secured for them an ever-greater abundance of natural fibers and other materials produced and supplied by the world's planters and farmers. Thus agricultural progress throughout the world became necessary to the well-being of the people in industrial countries.

Not all the world's farmers were drawn into the international markets. Huge agricultural areas in Asia, large sections of South America and Africa, and even parts of southeastern Europe and Russia remained more or less secluded and emancipated from an exchange of farm products. Yet in 1914, one could rightly speak of the world's agriculture as a system of communicating vessels. Farm produce was loaded or unloaded in all the important ports of the world, and the size of the crops in distant lands was reflected in prices in all those ports and frequently in prices in exporting as well as importing countries.

First Repercussions of War

When the assassin's bullets struck the body of the Austrian Archduke at Serajevo and for some weeks later this peaceful exchange of food, feed, and fibers against fertilizers, farm implements, and all sorts of other industrial goods still flourished. But on August 3, 1914, this agricultural world broke asunder, suddenly and progressively.

The immediate effect of the war on the food world was the elimination of the Central Powers as buyers on the world market and the

disappearance of German and Austro-Hungarian markets for Continental and overseas agricultural exporters. Russia's wheat and barley, Rumania's corn, Italy's citrus fruits, Belgian and French vegetables, America's cotton, Argentina's linseed, Oceania's wool and apples, and Africa's peanuts—to mention only a few products, could no longer be shipped to central Europe. Germany bought roughly 4.6 billion marks' or 1.1 billion dollars' worth of agricultural imports in prewar years; Austria bought 580 million kronen or 118 million dollars' worth of food and considerable imports of agricultural raw materials.

The immediate reaction of the world market was a hectic rise in prices of some basic export food commodities such as wheat, rye, sugar, and meat; a decline in some fibers and coffee; and no change in commodities such as tea and cocoa. From July to September, 1914, the prices moved as follows: ⁵

Wheat at Winnipeg	from 90 to 115 cents per bushel
Wheat at Chicago	from 82 to 115 cents per bushel
Wheat at Buenos Aires	from 8.45 to 10.20 paper pesos per 100 kilos
Rye at Chicago	from 59 to 97 cents per bushel
Barley at Winnipeg	from 52 to 66 cents per bushel
Oats at Winnipeg	from 38 to 53 cents per bushel
Oats at Buenos Aires	from 6.00 to 7.50 paper pesos per 100 kilos
Corn at Chicago	from 67 to 82 cents per bushel
Sugar, refined, at London	from 15s. 10½d. to 30s. 3d. per 112 pounds
Sugar, raw, at New York	from 3.32 to 6.00 cents per pound
Coffee (Central American) at London	from 66s. 6d. to 63s. per 112 pounds
Cotton (American) at Liverpool	from 6.02d. to 4.76d. per pound
Cotton at New Orleans	from 13⅞ to 7½ cents per pound
Mutton (New Zealand), chilled or frozen, at London	from 36s. 2d. to 52s. 6d. per 112 pounds
Beef (Argentine), chilled or frozen, at London	from 53s. 8d. to 67s. 8d. per 112 pounds

⁵ Data from *International Yearbook of Agricultural Statistics* (Rome, 1922).

Behind these reactions of the price barometer to the outbreak of the war lay the whole range of emotions in the minds of the hard-boiled and cool-headed business men active in the world's trade—from consternation and panic in some commodity fields such as cotton to extravagant expectations of a gigantic boom in grains and meat.

What the war did to the economy of various countries is by no means easy to summarize. To show in accurate quantitative terms what it did to agriculture is almost impossible.

War causes severe dislocations in many fields of human pursuit. It plays havoc with statistics. Shortly after the outbreak of hostilities many nations ceased the publication of foreign trade statistics. By 1914 agricultural statistics in many countries were in a most unsatisfactory condition, as in some they still are today, but during the war years they became more and more defective even in countries where advanced methods were employed. For years large territories were actual battlefields, others changed hands during or after the war. In countries where rationing, requisitioning, and war price control were drastic, farmers reported neither acreage nor yield as reliably as they did in prewar years.

Despite all these difficulties, it seems possible to present sufficient evidence regarding the nature and the approximate extent of the changes in the agricultural economics of the most important countries, especially since that monumental economic and social history of the World War, edited by James T. Shotwell under the auspices of the Carnegie Foundation for International Peace, contains many volumes pertaining to the effects of the war upon the agriculture of specific countries, particularly European ones. Moreover, many early documents and reports by committees of the League of Nations deal critically with this very subject and contain the considered opinion of highly qualified national experts.

The Impact of War upon Agriculture

The productive capacity and the actual output of agriculture suffered most where the military draft deprived the farms of an adequate supply of manpower and where the war or subsequent revolutions and reforms disorganized rural economy to such an extent that large tracts of land and farms were laid idle, the yield of crops declined,

and the livestock herds shrank in numbers as well as in production.

With an ideal demand situation in the market, and very favorable prices for their products, farmers had every incentive to step up production. However, in many of the belligerent nations, the odds turned more and more against the farmers. Military action deprived them of some specific means of production. Land, however, will yield good crops only when all production factors are available for combination in the proper proportions.

It is not often realized that land is really only an opportunity to apply capital, management, and labor in varying degrees, and that without these or with too little of them, even the most fertile soil will yield mostly weeds. A great volume of high-quality farm products on the farm, moreover, will not, of itself, keep people in the cities from starving to death. The crops must be moved to the cities at the proper time, and be stored, processed, and distributed there.

On the farm men are required who can manage, have the proper skills, and are physically able to perform the many sorts of work; animal or mechanical draft power is needed to move the implements and wagons in the fields and on the road; replacements are necessary for tools and machinery in order to keep them in operation; and finally, to keep the farms going, raw materials, such as fuels and lubricants, twine and sacks, fertilizers and fungicides and insecticides are necessary. Once the products leave the farm, transportation, storage, and the many functions of the collecting and distributing wholesale and retail trade become significant. Any one of these materials and resources is directly and indirectly affected by war because each is competitive with military needs or with industrial needs essential to the prosecution of the war, or with both.

Labor Supply.—In all belligerent countries the draft for military service and the demand of war industries for workers who could replace their drafted men deprived agriculture of a certain proportion of farm labor. Skalweit⁶ estimated that "nearly 2.7 million men had been withdrawn" from German agriculture during the war. This figure represented 52 per cent of all males over 14 years of age engaged in agricultural work, or 27 per cent of the entire working force of

⁶ August Skalweit, "The Maintenance of the Agricultural Labor Supply During the War," *International Review of Agricultural Economics* (Rome, 1922), XIII, 851-852.

10,000,000 men and women upon whom the agricultural production mainly depended. Of the men previously engaged in agriculture 63 per cent were lost for farming due to mobilization. In southern Germany the war reduced the farm labor force to 70 per cent. In France the military draft cut the male farm labor down to 30 per cent of the prewar level, and labor of both sexes was reduced 56 per cent.⁷

In Austria-Hungary the shortage of farm labor plagued the government in a similar way, though it probably never reached the same severity as in France or Germany, due to the lesser need for industrial labor. Nevertheless, in many mountain villages the farms were deprived of all younger men who were physically and mentally fit to serve in the armed forces. The nature and scope of the measures taken to combat the labor shortage during the war illustrate how great the emergency was.⁸

The countries where a great many people were employed in agriculture and in which an oversupply of farm labor was normal, nevertheless suffered seriously because of the draft of farm manpower. The most competent and efficient farm managers happened to be men of draft age, and they were mentally and physically most suited for active service at the front. Because there was no understanding of the need to maintain agricultural production at a high level on the part of military authorities and draft boards, little attention was paid to deterioration in the quality of farm labor or the resulting loss of efficiency in production. All of the Continental belligerents measured the requirements for replacement simply in terms of numbers of laborers.

Nowhere did this policy cut deeper into the farm economy than in Russia where, as has been estimated, 40 per cent of all the 27,000,000 able-bodied male population of the peasant farms, i. e., 10.8 million men, were called to the colors.⁹ The large estates lost by mobilization 800,000 men, but gradually received prisoners of war for replacement, attaining the peak of 430,000 men in 1917. Despite the immense loss

⁷ M. Augé-Laribée, *L'Agriculture Pendant la Guerre* (Carnegie Endowment for International Peace, the Economic and Social History of the World War, French Series, New Haven, 1927), pp. 66-87.

⁸ Cf. Hermann Kallbrunner, "Measures Taken during the War to Maintain the Supply of Agricultural Labor," *International Review of Agricultural Economics* (Rome, 1922), XIII, 219-262.

⁹ A. N. Antsiferov, A. D. Bilimovich, M. O. Batshev, D. B. Ivantsov, *Russian Agriculture during the War* (Carnegie, New Haven, 1930), p. 117.

in manpower on farms, it is not justifiable to conclude that agricultural production was affected in any similar degree. The peasant farms in particular absorbed the shock with the remaining population of women, children, young men below draft age, and overage and partly disabled men.

Even in the neutral countries, the industrial war boom and the maintenance of larger military forces saw the labor supply diminish. The same thing began to happen in Great Britain, but a cautious policy before and after the adoption of the military draft in 1917 averted some of the ills suffered by the Continental belligerents.

In some countries laws were passed making compulsory the deferment of farmers and farm workers under certain conditions. Minimum wage rates for farm labor were fixed in others, campaigns to recruit farm labor forces composed of women and school children introduced, and special furloughs to soldiers and convalescent wounded men granted for farm work service. Invalids were discharged from the armed forces so they could return to their farms; and war prisoners were released from camps to farms. Foreign migratory farm laborers were kept on the farms for the duration, and individuals were even drafted for farm work.

Germany made probably the greatest effort to cope with the farm labor shortage. Large-scale German farms, particularly in sugar-beet areas and potato-surplus areas employed some 350-400,000 Polish migratory laborers each year during the growing season. In 1914, these migrants, who ordinarily left the country after the harvesting season in October, were detained, most of them until the end of the war. In her successful campaign against Russia, Germany took large numbers of prisoners who were professional farmers. The battles of Tannenberg (August, 1914, and February, 1915) yielded a considerable quota of farm labor for the 1915 crop year. In 1916 about 700,000 prisoners of war worked on German farms; in 1917 some 800,000; and in 1919 more than 900,000.¹⁰

While these men did not work so efficiently or with the normal zeal of good farm labor and while their numbers meant additional heavy consumption of food, the value of so large a labor force in maintaining production must not be underestimated. The depletion of the normal corps of farm managers and the continuing shortage of ma-

¹⁰ Cf. Friedrich Aereboe, *Der Einfluss des Krieges auf die Landwirtschaftliche Produktion in Deutschland* (Carnegie, New Haven, 1927), pp. 32-34.

chinists, mechanics, blacksmiths, and wheelwrights on large-scale farms was more responsible for the decline in crop yields than was the lack of physical labor. These large commercial farms were, however, the backbone of the supplies of the cities. Family farms which lost so many heads of families and heirs succeeded much better in closing the ranks with other family members. Yet while their production was better maintained, the government did not effectively control the utilization and sale of their produce nearly so well as it did on large estates.

Germany made most energetic efforts to reorganize agricultural production in the occupied areas in the east and in Rumania, but was not very successful. There, the failure arose rather from an inability to manage the productive resources of occupied agriculture competently and to induce the people on farms to work efficiently.

Draft Power.—While the military draft made deep inroads upon the manpower and the managerial resources of agriculture, the conscription of many millions of horses by the armies dug deep into European farm draft power supplies. In 1914 tractors were still uncommon on farms. Even the United States produced no more than 7,000 tractors in 1913 and 15,000 in 1914. When the war broke out, the traction power for plows, cultivators, and harvesters on farms the world over was supplied by horses, mules, and oxen.

Agriculture in Europe was affected much more seriously by reason of the reliance of armies upon horses to so great a degree for mobility and draft power. The large cavalry formations required one horse per man plus reserve horses. Cavalry, infantry, engineer, and ambulance units moved their wagon caravans including munitions, field kitchens and sundry equipment with draft horses. The heaviest demand for the best farm horses came from the artillery and this demand grew rapidly. Every field gun, light or heavy, was drawn by at least six horses of a type far heavier than those used by other forces, and all the shells again were moved by horses. Even the heavy machine guns and their ammunition were horse-drawn.

When the war began all armies immediately conscripted the cream of the agricultural horse population for their own purposes, and as losses were incurred, they drafted more. Most European breeds mature in four years for real work, Belgian and Percheron types one year earlier. Mares at best produce one foal a year. Farmers made

every effort to replace their losses quickly by increased breeding, despite the fact that during pregnancy and while nursing her foal a mare's working capacity is greatly reduced.

To close the ranks of their decimated herds of draft animals, farmers all over Europe resorted to the use of larger numbers of cows. Even water buffalo were shipped into Germany from the Balkans. It was not a satisfactory solution. Cows, when worked, yield less milk. Draft cattle did, however, use less grain than horses. The huge horse herds of the armies demanded most of the oats available on farms. Army horses received better-than-peacetime farm rations of grain and hay. Moreover, more oats than formerly were requisitioned by the food administration for direct human consumption. Farmers were permitted only wholly inadequate grain rations for their remaining horses. The gradually increasing tightness of the feed grain situation, especially in Germany, Austria-Hungary, and territories occupied by their armies, led inevitably to a gradual decline in the output of work per horse.

When finally almost worthless straw meal and leaf cakes had to be fed even to army horses, farmers worked horses for only three or four hours a day in order not to exhaust them completely. Again family farmers succeeded in keeping their horses in better trim than did the large estates, because they could violate the absurdly low rations for horses without being denounced by disgruntled workers. By obeying rations, the large German estates lost thousands of horses through colic and other disorders.

In Bulgaria, Rumania, and especially in unoccupied Russia the shortage of horse power was much less severe than in the central European sector where the depletion of draft power combined with that of manpower forced the farmers to lower the acreage of the labor-and-draft-power intensive hoe crops which yield more food energy than any other crop.

In Holland, Denmark, Norway, and Sweden combined the number of horses rose from 1911 to 1920 by 20 per cent; in Switzerland it declined by 7 per cent. Spain increased its stock of horses during the same period by 9 per cent, Great Britain and Ireland kept theirs stable. Yet for Europe as a whole the number of horses declined from 1911 through 1921 from 44.3 million to 38.4 million head or by 13 per cent. The world total shrank from 110 to 100 million head or by 9 per cent.

In the United States farmers bought during 1914-19 approximately 340,000 tractors¹¹ and yet kept their population of 21,000,000 horses and mules on farms stable during those years, with a fluctuation of only a few hundred thousand. In Argentina and Uruguay the horses did not increase during the decade 1911-21. Australia increased her stock slightly; New Zealand decreased hers.

Declining Acreage.—Hand in hand with the depletion of the power resources—both men and draft animals—in Europe's war area went a reduction of the acreage of crops under cultivation. This can best be seen from a few data concerning the grain acreage. Recovery became visible in most instances in the 1920 crop. The percentage of acreage in cereals below that of 1913 in the year 1919 was as follows:

Area	Per Cent below 1913
Western Front area of Belgium and France	41
Uninvaded France	26
Italy	10
Germany (postwar boundaries)	19
Austria (prewar boundary)	23
Continental Europe, excluding postwar Russia and Turkey	15

In Yugoslavia, Rumania, Bulgaria, and Greece the grain acreage in 1920 was still 17 per cent below 1913. The five neutrals, Switzerland, Holland, Denmark, Norway, and Sweden could barely maintain their acreage, being only 1 per cent below 1913. The postwar area of Russia showed a 31 per cent lower grain acreage in 1920, which declined still further in following years, so that in 1922 the acreage in grain was scarcely more than half (53 per cent) that of the 1909-13 average. On the Continent, the two other neutrals, Spain and Portugal, were the only countries that increased their acreage above the 1913 figure: in 1918 by 8 per cent, and in 1919 by 9 per cent.

On the British Isles, including Ireland, the grain acreage, still at prewar level in 1916, increased to 112 per cent of prewar in 1917, and to 132 per cent in 1918, to recede in 1919 to 121 per cent and in 1920 to 112 per cent of prewar acreage.

French North Africa kept her acreage around the prewar level, while the United States and Canada, and the three main grain areas

¹¹ U. S. Dept. Agri., *Agricultural Statistics* (1941), p. 564.

of the Southern Hemisphere—Argentina, Australia, and South Africa—all experienced a most important expansion in acreage. By 1918 the North American acreage was 18 per cent above prewar, and that of the Southern Hemisphere 13 per cent above prewar acreage.

Chart II shows the changes in the area under cereals for the period 1914-18 compared with the prewar average (1909-13 = 100) as well as the further relative change during the postwar years 1919-21. The chart illustrates also how far the yields and the production departed from the prewar average during and after the war.

One must remember that the urgent demand for cereals within the orbit of the blockaded Central Powers as well as in France and Great Britain and the ensuing high prices gave all farmers in the world a powerful incentive to expand their grain acreage; but at the same time, under the strain of the submarine war, the shortage of ships put the brakes on the expansion in the most remote export countries such as Australia and Argentina.

Deterioration in Yields.—Acreage alone, however, does not determine the output of grain or any crop. In the biological industry of farming, the yield per acre is the result of a combination of all factors affecting the growth of the plants, those supplied by the farmer's work and intelligence as well as the weather and all other natural conditions, among them the incidence of pests and diseases. Therefore, the actual volume of output can be planned only as a goal with a wide margin of error. During the five-year period 1914-19, the average yields per acre of each of the five grains declined on the European Continent, excluding Russia. On the whole it appears that despite a wider-than-normal margin of error and some distortions in the data the averages for several years and for large areas give vaguely a true picture of the actual situation. Naturally the yields changed in different degrees for each grain variety for each country.

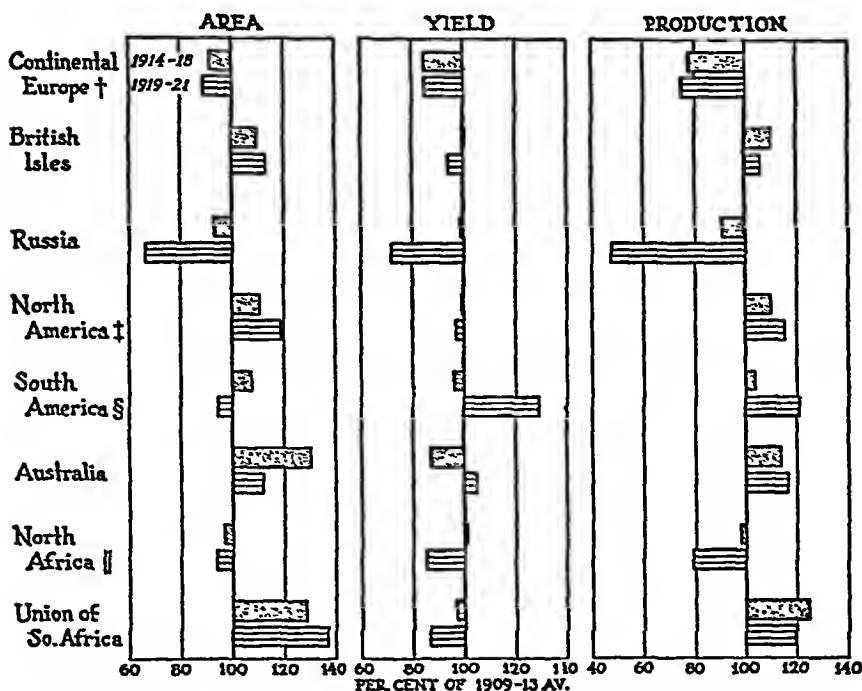
For the Continent as a whole they fell in similar degrees for the four small grains and much less for corn. Belgium, Germany, and Austria show much heavier declines than France, while Italy succeeded in maintaining the yield per acre, and the Netherlands improved it. Chart II shows that Australia's yields declined heavily and that South America and South Africa also had smaller average yields than before the war.

The serious decline of yields in Germany is partly to be explained

CHART II

CHANGES IN AREA, YIELD AND PRODUCTION OF CEREALS, 1914-18
AND 1919-21,* IN PER CENT

(1909-13 = 100)



* Data from *International Yearbooks of Agricultural Statistics*. Cereals included are wheat, rye, barley, oats, and corn. Averages incomplete in some cases.

† Excluding Russia.

‡ United States and Canada.

§ Argentina, Chile, and Uruguay.

|| Algeria, Morocco, and Tunis.

by the reduction in effective manpower and draft power, by the deterioration in the value of manure due to the absence of the large imports of oilseed and oil cake, by the decline in fertilizer supplies, and by the shortage of high-grade seed.

TABLE 4
FERTILIZER CONSUMPTION IN GERMANY, 1913-20 *
(1000 tons)

Year	Phosphates (P_2O_5)	Nitrogen (N)	Potash (K_2O) †
1913-14	630	210	536
14-15	519	98	484
15-16	425	73	520
16-17	368	80	680
17-18	325	92	834
18-19	231	115	609
1919-20	138	159	645

* Friedrich Aereboe, *Der Einfluss des Krieges auf die Landwirtschaftliche Produktion in Deutschland* (Carnegie, New Haven, 1927), pp. 41-43.

† 1913-20 calendar years.

As Table 4 indicates, the rapidly expanding production of artificial nitrogen was taxed so heavily by the munitions industries that German agriculture received only one-third, or between one-third and one-half the former annual supply. Phosphate supplies also dwindled. Potash consumption alone increased. However, even for a single field it is impossible to attribute the yield of any crop grown under field conditions to specific single growth factors. This is even more true if several crops for entire countries are under review.

The combination of changed acreages and changed yields per acre resulted in a production of grain which reached its lowest ebb in Germany, Belgium, and occupied France. On the area of prewar Germany the grain crop dropped in 1916 to 80 per cent of the prewar figure (1909-13 = 100); in 1917 to 54 per cent; and rose in 1918 and 1919 to 63 per cent and 59 per cent respectively. In Belgium and 10 French *départements* the crop of all grains reached its low at 46 per cent of the prewar figure in 1919. Uninvaded France harvested grain crops ranging from 1913 through 1918 as follows: 98, 75, 78, 57, 70, and 58 per cent of prewar level. For Continental Europe, excluding

Russia, no satisfactory statistics are available, but in 1920 a crop 72 per cent of the prewar figure was recorded. By that time postwar-Russia's territory produced a crop only 49 per cent of prewar level, but this immense and disastrous decline was much more the result of the revolution than of the war. Great Britain boosted her grain crop by 12 per cent in 1917 and by 32 per cent above her prewar figure in 1918. During the years 1915-18 the United States and Canada harvested 12 per cent more grain than in prewar years, and during the first two postwar years 10 per cent more. The Southern Hemisphere harvested for the average of the four war years 4 per cent more than prewar, but in the two postwar years 17 per cent more.

Wartime Adjustments

We may conclude, therefore, that the four years of war and its aftermath deteriorated agricultural production in Europe in varying degrees, and most severely in European and Asiatic Russia, while it led to an expansion of production in the main overseas grain and livestock exporting areas and to an expansion on the British Isles. By 1919, Russia, one of the foremost grain exporters of prewar times, completely disappeared from the world market, while the United States and Canada nearly doubled their prewar exports of grain. The Southern Hemisphere exported 20 per cent more while the Continent imported some 8 per cent less and the United Kingdom and Ireland 31 per cent less than in 1909-13. In other words, the much increased overseas exports were not yet large enough to compensate for Russia's former exports and to give Europe the same volume of imports she formerly had.

As during the war years, the Europeans closed the gap by tightening their belts. Rationing was maintained in many countries, particularly in defeated Germany and Austria. In 1919 total consumption of all grains on the Continent (excluding postwar Russia) was 22 per cent and, even in the United Kingdom and Ireland 23 per cent, below prewar (prewar territory) consumption. While the statistics for some countries on the Continent for 1919 are none too good, the difference in area which was larger in 1919 due to Russia's territorial losses, makes the consumption data even more impressive. It need not be mentioned that in 1929 the grain supply was utilized in a different way than it

was in 1909-13. More was utilized for food; less for feed and seed. A much worse situation prevailed for fats and meat, for which no useful consumption statistics are available.

The shortage of grain and other crops left Continental agriculture with a decimated livestock herd. In 1920 Continental Europe excluding Russia and Turkey had 7 per cent or 2,000,000 fewer horses, 6 per cent or 6,000,000 fewer cattle and buffalo, 16 per cent or 22,000,000 fewer sheep, and 22 per cent or 16,000,000 fewer pigs. Table 5 shows the difference between varying regions.

TABLE 5
CHANGE IN LIVESTOCK NUMBERS IN CONTINENTAL EUROPE,
BY REGIONS *

(1920 in per cent of 1913)

Region	Horses, Asses, and Mules	Cattle and Buffalo	Sheep	Pigs
Northern neutrals	112	99	93	79
Spain and Portugal	102	118	117	155
Uninvaded France	81	90	58	67
Western Front	74	74	45	67
Italy	114	102	107	96
Germany of 1923	94	91	123	63
Ceded German area	77	90	118	67
West Central Europe	88	97	135	76
East Central Europe	80	96	75	70
Balkans, excluding Greece	80	85	77	79
Greece	105	72	96	119
Baltic States	88	93	103	85
Poland, Bessarabia	91	95	78	146
Continental Europe, postwar boundaries	92	93	85	78
United Kingdom and Ireland	109	98	78	84

* From League of Nations, *Agricultural Production in Continental Europe during the 1914-18 War and the Reconstruction Period* (Geneva, 1943), p. 73, Table 3b.

From these index figures it can be seen that the cattle herd was reduced everywhere, except in Spain, Portugal, and Italy, where the herds expanded; that the sheep flocks increased in Germany, west central Europe, the Baltic states, Spain, and Portugal; and that pigs declined in numbers everywhere except in Greece, Poland and Bessarabia, and in Portugal and Spain.

Comparative data for 1911 and 1921 indicate that the war led to a reduction in cattle herds in Africa and South America, an increase of 13 per cent in North America, and of 12 per cent in Asia; and 14 per cent in Oceania. For the same decade the sheep flock declined drastically in North, Central, and South America, Oceania, slightly in Asia, and increased somewhat in Africa. Pigs declined everywhere in the world—from 260,000,000 to 210,000,000 between 1911 and 1921 which is understandable for times in which grain prices were so high that it paid better to sell the grain than to feed it.

The actual loss in production of milk and meat particularly in Europe was much more severe than the livestock numbers indicate. The weight and the feeding condition of the herds was in general much reduced.

One phenomenon contradicting all expectations must be reported. In tsarist Russia the livestock numbers increased during the war. In 1916, the third war year, with all its ill effects on farming, the total number of cattle had increased by one-fourth compared with 1914. Sheep and goats were 67 per cent larger in number, and in 1917 there were 67 per cent more pigs.¹² Russian scholars have explained this remarkable condition as due to the unwillingness of the peasants to sell their grain without being able to exchange the industrial goods they needed. Livestock was thus a form of hoarded capital. All observers agree that famine struck the cities in 1917 as a result of a stoppage of the flow of supplies from farms to cities, and not because of shortages or lack of produce.

¹² Cf. A. N. Antsiferov, *op. cit.*, p. 175.

World Agricultural Trends in the Twenties

FOUR long years of war brought to all countries a situation in which food became precious. Its production and distribution received the close attention of governments and the general public. Nearly everywhere food prices were publicly controlled, yet they rose to unprecedented heights. Where they were restricted in view of severe shortage, a considerable volume of the scarcest food commodities disappeared into black markets where they fetched exorbitant prices. In such a "sellers' market" farming was profitable and had a tendency to expand everywhere in the world. If despite this ideal demand and price situation it deteriorated in Continental Europe, it did so because farming there was deprived more and more of the essential means of production. During the war the pecuniary aspects of agriculture were by far subordinated in public policies to those of physical production. The return of peace saw this situation changed.

As we review the period of postwar recovery in Europe's agriculture and watch the revival of a world-wide exchange of food, feed, and fibers, we see how a great variety of economic developments came to replace the relatively simple situation of the war years which had put the emphasis almost exclusively on production. New economic policies began to affect agriculture in importing as well as self-supporting and exporting countries. Despite the many differences in various countries, profound structural changes in parts of Europe, and broken trends in policies, the era of the twenties stands out as a distinct phase in the world's agricultural history. It corresponds to and was a corollary of the business cycle between the peak of the postwar boom in 1919 and the culmination of the following boom in 1929.

Food Relief for Europe

When the Armistice was signed, food relief for Europe began on the largest scale. In the British Isles and in all parts of the Continent empty pantry shelves called for replenishment. The people needed

more bread of a quality worthy of the name. They wanted much more fats, sugar, milk, cheese, eggs, and meat. And besides these foods, they were longing for coffee, cocoa, tea, beer, and liquor. In some parts of Europe, especially Germany and Austria, hundreds of thousands of civilians died of the effects of starvation, millions more suffered from undernourishment, and still more from malnutrition. Hence all governments tried desperately to obtain food imports as quickly as possible. While the Armistice was signed on November 11, the first substantial shipments of food from America did not arrive until late in January, 1919.

In a letter of November 4, 1918, to President Wilson, Herbert Hoover, director of the United States Food Administration, estimated the available supplies and the needed import requirements of food for the world for the period up to the new crop year of 1919 to be in tons as follows: ¹

Commodity	Total Export Supplies	Total Import Necessities	Deficiency or Surplus	From United States
Breadstuff	19,000,000	16,000,000	+ 3,000,000	9,000,000
Pulses and rice	1,400,000	1,400,000	300,000
Feeds	8,000,000	11,000,000	- 3,000,000	5,000,000
Beef	1,600,000	1,600,000 *	300,000
Pork products	1,700,000	2,400,000	- 700,000	1,300,000
Oils	800,000	1,200,000	- 400,000	200,000
Dairy products	500,000	800,000	- 300,000	300,000
Sugar	5,000,000	6,700,000	- 1,700,000	1,500,000 †

* This being the limit of refrigerating ship capacity.

† Assuming Cuba as part of United States supplies.

The necessities in this estimate amounted to a total of 41 million tons, but due to short supplies, the requirements that could be met amounted to only 35 million tons, while prewar total requirements had been roughly 51 million tons, as Mr. Hoover stated in the letter.² The year 1919 was still one of food shortage in Europe, and farmers in overseas countries enjoyed an exceptionally favorable market situation.

During the year 1919 the British Isles and the European Continent excluding Russia received net imports of 18.8 million tons of grain

¹ Suda L. Bane and R. H. Lutz, *The Blockade of Germany after the Armistice* (Stanford University, 1942), p. 6.

² *Ibid.*

compared with 24 million tons annual average, 1909-13.³ Slightly more than 3 million tons were delivered as relief during the Armistice period which ended in August, 1919.⁴ Thus in this first year of the peace, Europe received only a little over three-fourths of a prewar normal year's imports of cereals, although the commercial stocks had to be replenished and men and animals were hungrier than they ever had been in prewar years. Even Great Britain, Holland, and Belgium imported considerably less than before the war. Great Britain received four-fifths her normal wheat and wheat-flour imports. Germany, still blockaded, received only 600,000 tons of cereals as relief under the Armistice, and did not obtain much more in 1919, whereas in prewar years, she imported 6.4 million tons of these materials annually.

Delayed Recovery of World Trade

If the flow of foreign trade in food did not immediately surge to the prewar level, there were several reasons for it. A part of the available shipping tonnage was still in use for repatriation of troops and other military operations. Many other foods, such as sugar, fats, and meats, as well as many industrial raw materials and manufactured goods, competed seriously with grain for what shipping space there was. Transportation on the Continent was still suffering from the deterioration of rolling stock and personnel, a shortage of coal, motor fuel, and rubber. Since Russia had disappeared as a grain exporter, the available overseas stocks were taxed more heavily by European demands. Moreover, many countries had great difficulty in financing the purchase of large food imports, not only in view of the desolate state of their public as well as private finance at home, but also because food prices in the world market were exorbitantly high and the exchange value of their currencies had shrunk if it had not collapsed. Food prices in the United States were more than twice what they had been before the war. Exports of some supplementary food commodities to Europe revived much more quickly than did those of the basic foods. In 1919 Europe imported net 66 per cent more cocoa and 8 per cent more tea than in 1909-13. Coffee imports remained 7 per cent below the prewar level.

³ *International Yearbook of Agricultural Statistics* (Rome, 1922).

⁴ *League of Nations, Relief Deliveries and Relief Loans, 1919-23* (Geneva, 1943), p. 50.

Of the industrial raw materials, foreign trade in all textile fibers remained much smaller in volume. In 1919 and following years, America succeeded in selling abroad only three-fourths of the cotton she had exported before the war. The world's rubber exports, on the other hand, which had expanded steadily during the war, continued their rise in volume without interruption in 1919 and later years. The rapid introduction into general use of the automobile, the truck, and the tractor meant a powerful uplift for the demand for rubber.

For several years Europe was still far from real peace. Before the final boundaries between Germany and Poland were drawn by plebiscite, and between Poland and the Baltic states, Hungary and Rumania, Austria and Czechoslovakia, and Yugoslavia and Italy, fighting broke out in many areas. In central and southern Germany, revolts and organized banditry plagued the countryside. Separatist movements swept the Rhineland while it was occupied by the Allies. From the Armistice on, inflation, which had progressed at a more moderate pace during the war years, continued with considerable acceleration as paper money was printed out of proportion to the revenues of the government and the volume of production. Under the impact of the French military occupation of the Ruhr and the German government's policy of passive resistance, inflation of the mark ran wild in 1923 and completely wiped out the value of the currency. In Austria and in Hungary Communist uprisings and temporary dictatorial regimes of the left-wing radicals disturbed the peace.

Agrarian Reform in Eastern Europe

When bloody battles waged by the successor states had prevented the revolutionary convulsions of Soviet Russia from spreading beyond her new western boundaries, agrarian reforms were carried out all over eastern and southeastern Europe. These reforms had the common motif of reducing or eliminating the influence of the caste of large estate owners or of freeing the family farms of the competition and domination of the large-scale farms. The scope, intensity, and effect of these reforms differed greatly from country to country and even within the borders of one nation. In the new Baltic states the expropriated large estate owners were essentially the German element in those former provinces of tsarist Russia. Thus the reform was directed mainly against racial and ethnographic minorities, and

thereby easier to accomplish. It abolished the estates, distributed the land to newly settled family farmers, and laid a sound foundation for an agrarian structure with the broadest distribution of land. These states initiated most successful experiments with advancing eastern peasant farming, along lines of policy pursued for many decades with such remarkable success in Scandinavian countries. In Poland the reform gained real momentum only in the former German areas of Pomorze, the so-called "Corridor," in the Province of Posnan, and along the Silesian border. There it was essentially a question of putting Poles on land cultivated before as large estates by Germans who left voluntarily or who were expropriated. In the newly acquired western borderland, this colonization was swiftly and successfully carried out by primitive pioneer methods, while in central and especially south-eastern Poland the reform never made much headway, large estates remaining in great numbers.

Hungary was even more untouched by the agrarian reform. All it amounted to was settling veterans on farms. In Rumania and Bulgaria the reform reached into the very foundations of agriculture. It really abolished the large estates and established family farms in their place. In Greece the reform was overshadowed by the need of settling large numbers of repatriated Greek refugees from Turkey, Yugoslavia, and Bulgaria. Czechoslovakia and Yugoslavia expropriated and cut up many manorial land tracts. In Germany the reform never made much progress. When it was finally attempted in the early thirties, the Junker class's *coup d'état* stopped it. Thus Poland, Hungary, and Germany remained countries where a substantial part of agricultural production was dependent upon large-scale agricultural enterprises whose owners continued to wield great political influence and power. Where they were carried out, the agricultural reforms eliminated the power of a feudal caste in the rural sphere and reassured and strengthened the great mass of average peasants. However, the reforms had deterring effects upon agricultural production for many years. This holds even for countries where they were contemplated but in the end not carried out. While pending, they added increased risk to long-term investments on large estates. In Rumania the reform impaired the productive capacity of agriculture for many years, because the competent and skilled managers of large estates were replaced by a multitude of less educated, less experienced and ill-equipped small-farm operators. To retain former productivity or to

improve it would have required a more energetic vocational training program than the one the government adopted, and even then it would have taken time. All the agrarian reforms passed no less than 70,000,000 hectares of cultivated land and in some countries a most substantial proportion of all agricultural land into the hands of the peasants.⁵ In Greece fully 50 per cent of the farm land fell under the reform, in Rumania 35 per cent. In Latvia, Estonia, and Lithuania, 42, 25, and 18 per cent respectively of the land was affected; in Hungary and Yugoslavia 10 and in Poland only 6 per cent.

In western and northern Europe the rural sphere remained essentially what it had been before the war. Portugal, Spain, and Italy, France, Belgium, Holland, Switzerland, Denmark, Sweden, Norway, and Finland all kept their existing agricultural systems intact. And in the other countries on the Continent, the reforms served mainly to assimilate the agrarian structure into that prevailing in the western and central sections. It was still, in a sense, a continuation of the French Revolution or more specifically of the emancipation of the peasants in the middle of the last century; but nowhere did the changes tend toward socialization of land in favor of public ownership. Whatever "socialization" was carried out served the purpose of attaining a more equal distribution of land by passing the title to latifundia into the hands of many small proprietors. Compared with a revolution that nationalizes all land and thus subjects tenure to central political decisions, these reforms amounted to a more solid entrenchment of private property, and with it, private initiative in agriculture.

Gradual Agricultural Recovery in Europe

Aside from the structural reforms in many countries, the chief interest of the public, as far as agriculture was concerned, turned to the flow of production. After 1919 all European governments started programs for bringing their agricultural production back to normal. Replenishing the livestock herds and restoring the feed supplies were key measures toward that end. One of the reparation payments imposed on Germany stipulated the delivery of cattle to France. Some of this cattle was actually delivered by the Germans; but it unex-

⁵ Concerning the effect of the agrarian reforms, see V. P. Timoshenko, "The Danube Basin as a Producer and Exporter of Wheat," *Wheat Studies of the Food Research Institute*, March, 1930, VI, 202-212.

pectedly depressed the prices of cattle in France, so the deliveries ceased after strong protests by French cattle raisers.

Despite such general interest in, and in many countries effective public support for agricultural reconstruction, it was to be expected that the effects of the war on crop production and especially upon livestock herds could only gradually be overcome. The depletion of soil fertility, caused by deficient fertilizer application, shortage of plant nutrients in manure due to the absence of imported oil cake as feed, inadequate cultivation, and spreading of weeds—all these damages—required several growing seasons to repair. Among livestock, cattle represent the greatest value. To rebuild depleted herds takes five years or more. Since long-lived dairy cattle represent gradually accumulated capital on farms, rebuilding herds is more than a problem of physical restitution by breeding and feeding—it is a matter of gradual formation of capital out of profits. When the herds were depleted during the war by requisitioning, insufficient feeding, and sales, almost nothing remained. Defaulted war bonds, currency inflation, war taxes, and many other conditions had consumed whatever was exchanged for the former livestock assets.

Indeed, in many parts of Europe the recovery of farm production was very slow. In each country its rate of progress was, to a large extent, an expression of the professional skill, alertness, and versatility of the farmers. Adverse general economic and political conditions could and did impede and delay the process of regaining efficiency, even in countries where the majority of farmers were competent. Favorable conditions scarcely could, on the other hand, show early results in farm production where indolence and ignorance were the dominant traits of the farm population. Professional backwardness of farmers and the lack of adequate equipment, in combination with politically unstable and economically depressed conditions, were bound to thwart recovery altogether.

The year 1921 brought exceptionally good weather to Europe. An excellent crop of wheat was harvested in most countries. Other grains fared well, too. Scandinavia, Finland, the three Baltic states, Denmark, Holland, the United Kingdom, and Italy all reaped between 2 and 5 per cent more grain than they had in prewar years. Spain and Portugal, as prosperous neutrals, raised a bumper crop 13 per cent above the prewar level. In Germany, the former Austro-Hungarian area, Poland, and in the Balkan countries, the grain acreage improved, and

except in the Balkans the yields were also better than in 1920. Yet the crop still remained from 20 to 30 per cent below the prewar level. In all overseas exporting countries, grain crops were considerably higher than before the war. North Africa had a 30 per cent better crop than in 1920; South America, Australia, and South Africa, as well as the United States and Canada, harvested 12 to 13 per cent more grain than in prewar years—this on top of preceding record crops as much as 22 to 23 per cent above prewar crops.

Famine in Russia

Soviet Russia had lost the Baltic states, Finland, Poland, and Besarabia, but still possessed the great grain surplus areas which had yielded such an important part of the world's prewar exports. Yet in this very year of good grain crops everywhere else in the world, Russia reached the lowest ebb of her agricultural production with a grain output 60 per cent below prewar level. The disaster hidden behind this dry figure did not affect the outer world, due to Russia's complete political and economic seclusion. After having abandoned their abortive military expedition against the new regime in Russia, the former allies were unwilling to recognize it, or to assist it in any way. Yet when the great famine struck in full force in 1922, it created such horrible conditions that the American Relief Administration distributed \$60,000,000 worth of American-grown food in Russia. This food, quite small in amount compared to the vastness of the need, was just as much a financial relief to American farmers in the glutted market as it was rescue from certain death by starvation for many Russian men, women, and children. As had happened so often before in China, Russia's civil war, political chaos, and economic paralysis prevented the transfer of food from areas of abundance to others of dire shortage.

Agricultural Depression in Export Countries

In the agricultural history of the Americas as well as of Argentina, Australia and South Africa, the year 1921 is recorded as the memorable year of the postwar agricultural depression. Its repercussion was felt everywhere, but particularly in European agricultural exporting countries such as Holland, Switzerland, and Denmark, while many

of the Continental countries were not much affected by it for a number of reasons. While the main phenomena of that agricultural depression in the chief exporting countries are beyond dispute, up to this day economists have not reached a state of agreement as to its causes, although since the depression of the early thirties they have made much headway in that direction. The most decisive development was the collapse in agricultural prices in all the exporting countries, notably those having the chief staple commodities. Wheat prices in the United States began to fall in May, 1920, from the peak of \$2.90 per bushel to \$1.70 in December, to descend in 1921 to a December level of \$1.15. Canadian prices, which never reached the United States peak, began to fall in August, 1920, from \$2.10 a bushel to slightly over \$1.00 in December, 1921. In Argentina wheat prices held up to October, 1920, falling to the Canadian level by December, 1921.

In the United States the price index of all farm products fell from 230 in 1919 to 123 in 1921 (1909-13 = 100). This decline was fairly well in line with the decline of the general wholesale price level, indicated by a fall from 206 in 1919 to 147 in 1921. Indeed, all the important countries in the world passed through a real depression phase of the business cycle. The war boom had come to an end. Industries and trades were no longer stimulated by public spending on a gigantic scale. Public budgets were curtailed and great efforts made to balance them. Everywhere demobilization demanded adjustments in all spheres of enterprise and employment. After years in which physical expansion of output was the paramount necessity, an era began in which again a net profit had to justify the expenditures. The mere interruption of the ever-increasing pace of expansion of production during and immediately after the war would have caused a serious jolt throughout the economies of the belligerents and neutrals. After years of an exalted inflationary process, such drastic deflationary policies could not but cause a depression.

Deflation and Its Wake

However, even without knowing the sequence of events in the industrial and commercial sectors of the economy, one can analyze independently the agricultural events as such and find sufficient reason for a serious depression, if not one of longer duration. This is possible because essentially the same process led to the inflation of prices

in the agricultural sector as elsewhere. Inflation sets in when, in the presence of an expanding active demand, the limits of the existing capacity to produce are reached so that the supply can no longer expand and thereby keep the prices within bounds. This holds for one country just as much as for several in so far as an aggregate supply must satisfy an aggregate demand. During the later war years the existing agricultural capacity was too small to satisfy the demand of all bidders. In the main overseas exporting countries, agricultural production was expanded while the various means of production—essentially manpower—became scarce and their prices rose. In the United States this situation was met by rapid expansion of the use of tractors and by mechanization generally. Aside from this shift toward the more efficient use of manpower, wheat and barley farming was carried further into the semiarid zones of the eastern slope of the Rockies. With wheat prices guaranteed by the government at \$2.20 a bushel, it was profitable to purchase or rent dry grazing land and to put it into wheat. In Canada the wheat boundary was pushed further north for the same purpose of increasing production. In Australia, bush land was cleared and in Argentina more pampas plowed.

So long as prices moved upward, all farms were profitable, because the generous price covered all marginal producers, too. This state of affairs changed overnight when prices began to fall. Then it was felt again, as it had been for generations, but more strongly now, how sensitive agriculture is to a severe lowering of the price level. With its exceedingly slow turnover in relation to invested capital, it begins to suffer immediately if it has operated with much foreign capital and if interest and taxes absorb a considerable proportion of the gross income. During the boom years land values had skyrocketed. These values found their expression in mortgages in proportion. When the prices of wheat and corn and land broke, tens of thousands of farms became delinquent.

It seems useful to make a brief excursion into the international wheat market once more to answer the question why, in spite of the slow recovery in European agriculture and in view not only of the absence of Russia as an exporter but even some Russian purchases abroad, the wheat prices should have collapsed in 1921 as they did. To begin with, the world excluding Russia made a wheat crop of 85,000,000 tons compared with a prewar average of 82,000,000 tons

and 79,000,000 tons the preceding year. The chief importing countries, i. e., Great Britain, Italy, Belgium, and France all had record yields per acre that exceeded those of prewar years. Germany's yield did not reach it, but was close to prewar average. All these importers harvested a wheat crop exceeding or equaling the prewar average, except for Germany, whose crop was one-fourth below prewar, but 35 per cent better than the preceding one. Great Britain, the world's heaviest importer, harvested a crop 25 per cent above prewar level. Thus the European demand for wheat was not as urgent as in other years. In the United States and Canada, a wheat acreage 52 per cent above the prewar acreage yielded a crop 25 per cent above the prewar crop. Argentina and Australia harvested a 34 per cent higher-than-prewar crop on acreage 13 per cent greater than the prewar acreage. The United States and Canada exported 14,000,000 tons of wheat and flour compared with 5,000,000 in prewar years, while Argentina and Australia shipped only 5,000,000 tons instead of the 4,000,000 shipped in prewar years, although their crops would have permitted much larger exports.

Maladjustments of Supply and Demand

From an emergency era where supplies were always too short to satisfy the demand and where an insistent tendency to expand production in regions outside Europe prevailed, the world had passed the threshold to a new period where either a new balance between available supplies and requirements existed or where supplies exceeded demand. Since the process of expanding the cultivated acreage as well as improving yields per acre was still in full swing in Europe and the expansion of acreage in overseas countries not yet arrested, the fundamental change in the world's food supply situation found its inevitable expression in a marked change in prices, the more so as relatively free competition existed among the different exporting countries. The financial weakness of a number of central European countries, for instance Germany, and the resulting thrift in importing grain, added momentum to the price decline.

The decline of the general level of the prices of agricultural commodities was influenced in part by the general deflation of commodity prices or the rise in purchasing power of the sound currencies. But within that framework, the actual movement of prices of specific

commodities was determined by factors of demand and supply.

The agricultural depression of 1921 did not hit everywhere with equal force. In countries with inflated currencies the shock of the price decline was cushioned or absorbed, although in terms of physical exchange ratios between different goods, agricultural products still lost purchasing power in many countries. Quite aside from the depletion of the former currencies in Germany, Austria, Hungary, Poland, Yugoslavia, and Russia, many European and South American currencies, including the pound sterling and the Canadian dollar, fell far below par. In Germany the price of wheat, previously fixed by the government, rose in 1921 from 79 to 126 gold marks per ton. In France it rose from 296 gold francs in 1920 to 344 gold francs in 1921.

From 1921 through 1924 Europe continued to suffer from political and economic instability, most pronounced in Germany and the successor states of the Austro-Hungarian Empire. Germany's runaway inflation came to an end late in 1923 when the mark was stabilized, but even in 1924 it was still questionable whether the newly established currency could survive. In the Danubian countries, the agrarian reforms still retarded the process of the recovery of farm production. In France, which enjoyed the good business of a rapidly rising automobile-manufacturing industry, more and more farms in the marginal agricultural areas were abandoned. Yet in Europe as a whole, agricultural recovery made steady though gradual headway, with the reopening of international capital movement, industrial recovery, and the revival of confidence in the reconstruction and final pacification of the Continent. It could have advanced much faster if warfare had really been terminated in 1918, if revolutions and civil strife had been avoided, and if the victorious powers, especially the United States, had pursued a determined and well-prepared policy of establishing a livable order on the Continent.

Wilsonian Principles versus Economic Isolation

In the absence of such bold policy by the power of arms, to which obviously the thought of statesmen, economists, and the general public had hardly sufficiently matured, each European nation was left to seek its salvation on its own account. The peace treaties had left the Continent with a new pattern of many more nations, based more or less on the Wilsonian principle of self-determination of national-

ities. This principle had done its part to win the people in Austria and Germany to the side of peace. For years it had many adherents in all countries, and inspired many newly created nationality states with a belief in a happier future. So far, so good. Most unfortunately, however, a tragic error had been made—no effective provision existed for securing and assuring free economic intercourse beyond the many new boundaries. Instead of being pacified forever by a maximum of economic co-operation, Europe turned out to be Balkanized into a multitude of compartments separated from one another and from the rest of the world by walls of obstacles to communication. Paradoxically, this condition was created with the tacit consent, if not commission, of the nation that owed its high level of living and its leading position in the world to the creation of a continental union of free trade among 48 different states: the United States of America.

Notwithstanding the carving up of the central and eastern parts of the Continent according to the nationality principle irrespective of economic necessities, the chief impetus behind the economic policy of every country during the twenties was the paramount desire to restore the conditions and the results of the prewar era. This might have been accomplished under the courageous leadership of the United States, Great Britain, and France, by a great united effort in which the majority of nations could and probably would have joined. It was the misfortune of all that the United States insisted upon declaring her independence as soon as victory was in sight. President Wilson himself authorized Mr. Hoover to issue by a cable of November 13, 1918, the following statement as guidance for America's representatives in Europe: *

On the other hand, we cannot undertake any co-operative arrangements that look to the control of our exports after peace, and furthermore and equally important, that the Inter-Allied councils hitherto set up in Europe were entirely for the purpose of guiding Inter-Allied relations during the period of the war and that any extension of their functions either by way of their control of our relations to other nations or the extension of their present functions beyond peace cannot be entertained by us.

Whether or not this instruction perhaps reflected Mr. Hoover's views more than the views of President Wilson seems irrelevant from our point of view. If the author of the 14-point peace program and

* Suda L. Bane and R. H. Lutz, *op. cit.*, p. 14.

the spiritual father of the League of Nations had been convinced of the necessity of the strongest economic co-operation among nations, he would never have given his approval to such a document.

In the light of the Atlantic Charter and the atmosphere prevailing in the United Nations' present efforts toward future peace, the frosty isolationism of this casual presidential instruction two days after the Armistice gives an idea how far removed was the concept of a co-ordinated, world-wide economic policy. Indeed, during and immediately after this first great venture into international co-operative action, that of fighting the war as Allies, the leaders of the same Allied nations were thoroughly tired of the venture and overanxious to regain, at the very earliest date, complete independence for themselves. America had saved France as well as the British Empire from certain defeat. In this action dictated by the necessity of self-defense, America had unexpectedly and unintentionally won the leading economic and political position. In the very moment of this greatest hour in her history, when the economic and political leadership of the world fell into her lap, America was even more anxious to retire from the scene than were her rescued Allies.

The Abandonment of Vigilance

It may be seriously doubted that the construction of a sound and solid peace by international action failed because the American public deserted a president who wanted to see America undertake courageous leadership in the world's economic and political affairs. We incline toward the opinion that neither in the United States nor in Great Britain, nor anywhere in Europe had the public opinion matured or the world-wide vision been perceived which alone could have supported a president's bold international economic policy. It took the agony of the years from 1918 through 1939 to drive the nations, wealthy and poor alike, over long detours, to the recognition of the real structure of this world, and to the formation of some conclusions as to how to shape policies composed of enlightened self-interest as well as mutual benefit. To initiate such action probably required, too, the passage through the vale of "blood, sweat, and tears," the end of which is not yet reached. Such is man's collective indolence, his drifting passage along the road of least resistance, and his innate desire to be spared that supreme effort which alone can establish a world

worthy of the great ideals of humanity. Unfortunately, the temptation to relax and remain indifferent to the affairs of distant countries in periods of peace cannot be stronger under any other form of government than it is in a democracy. The pursuit of immediate happiness has more appeal than have efforts to secure the nation's future existence and well-being at the expense of some curtailment of present comfort, particularly when the danger is neither visible nor acute. How to keep the sovereign people alert and eternally vigilant against foreign dangers remains one of the disquieting burdens of the statesmen of tomorrow.

Great Britain held the Empire Exhibition at Wembley in 1924, demonstrating to the world her desire to unify, strengthen, and reorganize the Empire and to foster trade and welfare primarily within this commonwealth and only secondarily her collaboration with the outside world. It is a matter for conjecture whether a determined economic policy on broader international lines would have essentially altered the course of British policy. Many British economists have shared the view that isolationism even within large economic blocs will eventually lead to international ruin and war. Pertinent to this discussion, however, is the fact that irrespective of more progressive trends of thought, the actual policy moved in the direction of the disintegration of allied or collaborative action. Military collaboration was abandoned by 1924 when the Inter-Allied Control Commission was disbanded.

France emancipated herself still more completely after her miraculous salvation through the unsparing combined deployment of the resources of the British Empire and the United States. Politically and militarily she tried to organize her security by financing the Little Entente, keeping Germany down, and maintaining the status quo of Versailles. Economically she subjugated her policy to this sterile concept of military balance of power.

Restoration of World Trade and Prosperity

Thus in the twenties the major philosophy behind the economic policy of the leading countries was dominated by the idea of eliminating the effects of disturbance and interruption caused by the great war and to restore the long era of prewar progress and peace. This desire began to be fulfilled during the years 1924 to 1929. The League

of Nations developed most promising activity in research, consultation, clearing of ideas, and the arbitration of many frictions in fields other than high power policy, in labor, public health, and nutrition. During these years European affairs arranged themselves somehow, settling into a new pattern of more than interim design. Indeed, the old system of an international division of labor in the production of food, raw materials, manufactured produce and consumers' goods through the channels of international trade gradually came back into its own.

An era of general recovery was felt throughout the world. In 1920 and 1921 the volume of the world's foreign trade was still only 80 per cent of what it had been in 1913, but in 1924 it reached 102 per cent. From then on it improved steadily and vigorously until it reached its peak in 1929 at a volume 130 per cent greater than the volume of pre-war world trade. In the United States and Germany nearly full employment was reached by 1928.

Agriculture on the European Continent was finally restored to its prewar state and in some countries advanced far beyond. The production of cereals nearly reached prewar volume, the potato crops were much larger. On top of this high production, the Continent imported 25 per cent more cereals than in prewar years. The livestock herds reached the prewar level in 1925; the pig herd was still 8 per cent lower.

Of the Continental countries, Holland and Denmark,¹ world champions of efficient farming, made most remarkable progress in expanding agricultural production and in selling an increasing proportion of it abroad, mainly in Great Britain and Germany. In 1913 Denmark had exported about 91,000 tons of butter. In 1921 with some territorial gains she again passed that mark, increasing the volume steadily at a rate of nearly 10,000 tons annually. By 1929 her butter exports reached 159,000 tons. In 1913, 123,000 tons of bacon were exported; in 1929, 248,000 tons. Exports of fresh eggs, mostly for the English breakfast table, were boosted to twice the prewar level. This impressive production record of Danish farmers was by no means a one-sided matter of producing and selling. It was, as usual, accomplished with improved foreign trade in both directions. During the twenties the country imported three to four times more fertilizer than in 1913; 1.5 to 1.6 million tons of grain and oil cake in place of 1.3 to

¹ Data from *Statistisches Handbuch der Weltwirtschaft* (Berlin, 1936).

1.4 million tons in prewar years. Danish agriculture prospered in spite of a decline in the index of wholesale prices, which had come down from 341 in 1920 to 150 in 1929 (1913 = 100). It prospered in spite of a decline in the price of bacon from 357 öre per kilogram in 1920 to 160 in 1929 or of butter from 6.40 kronen per kilogram to 3.03 kronen over the same period.

Holland presented a similar picture. As soon as the world's ports opened to trading ships once more, Dutch farmers cleared the decks for a greater volume and a higher quality of production than ever before. They further improved their excellent dairy herd, increased their pig herd by 60 per cent, and boosted their famous chicken flock from 10,000,000 in prewar times to 25,000,000 in 1929. Dutch agricultural exports gave vivid testimony to the status of production. From 1920 to 1929 the export volume of some chief items moved as follows: fresh vegetables from 237,000 to 528,000 tons; condensed milk from 53,000 to 528,000 tons; butter from 21,000 to 47,000 tons; cheese from 45,000 to 96,000 tons; eggs from 10 million to 1.4 million; meat from 16,000 to 95,000 tons; and flower bulbs from 16,000 to 34,000 tons. Again, as in the case of Denmark, foreign trade statistics demonstrated a similar evolution on the import side. Net imports of wheat, barley, corn, and oilseeds increased from 1.2 million tons in 1920 to 2.7 million tons in 1929, but the main balance for the high-priced agricultural exports of exceptionally high quality was made up by industrial imports.

In a review of the development of European agriculture during the period 1920-29, it may be considered unwarranted to use as examples these two foremost free-trade countries. Indeed, we do not present these data as proof that all countries fared equally well, but simply to indicate how the business volume of Europe's and perhaps the world's most skilled, most competent, and best-equipped farmers developed during that period. Significantly enough, agricultural output all over Europe improved from the Atlantic to the Russian border, and from the North Cape to the Bosphorus. Each of the countries, including the ones newly established, those which gained as well as those which lost territory, managed to improve agricultural production, most of them considerably surpassing the 1913 output.

In Great Britain, farm production was readjusted to prewar conditions. The acreage of plowed land, which had been increased from

5.8 million to 6.2 million hectares, was reduced to 5.3 million hectares. Wheat acreage, which had been boosted from 750,000 to 825,000 hectares in 1922, was cut to 560,000 hectares in 1929 despite continued payment of subsidies. In two lines only did expansion take place. Under heavy subsidy, sugar beets expanded from less than 2,000 to more than 93,000 hectares. The poultry flock was increased 65 per cent beyond prewar stocks, egg production increased over 100 per cent. Otherwise, Great Britain was again the world's greatest market for foods from everywhere. More butter, more meat, more fruits, and more vegetables than ever before were imported.⁸ Thus Great Britain again followed her traditional policy as the industrial center of the Empire—which meant keeping the homeland market open for the British farmers in the dominions and colonies and refraining from producing at home high cost food that could be obtained cheaply abroad.

In overseas countries as well the period between 1921 and 1929 showed many signs of progress, although farmers viewed the situation as one of semidepression. In the United States and Canada, grain production was carried on at a high level, 16 or 17 per cent above prewar; while grain exports in 1925-29 were kept at 38 per cent above 1909-13. United States exports of cotton were kept in the neighborhood of prewar volume, exports of tobacco considerably increased. In the United States the process of tractorization, motorization, and mechanization in general, which had been started and stimulated by the war, came into full stride. As a result, fewer people could produce more food in less time. From 1920 through 1929 no less than 1.1 million tractors were sold to American farmers. By 1930 there were 4.1 million automobiles, 900,000 trucks, and 920,000 tractors on farms. Farmers spent ever-increasing sums on implements every year; in 1929, a total of \$450,000,000. As cars, trucks, and tractors moved in, horses went out—mules still held their own. From 1920 to 1930 the stock of horses on farms was reduced from 20.1 to 13.7 million or by 31 per cent. Each of the 6,000,000 fewer draft animals freed 3.5 acres or 22.4 million acres all told, which was 8 per cent of the United States crop land for uses other than horse and mule feed. At the same time, direct human consumption of grain fell off while

⁸ Viscount Astor and K. A. H. Murray, *Land and Life: The Economic Policy for Agriculture* (London, 1932), pp. 52-85.

the per capita intake of dairy and poultry products, fruits and vegetables gained. The gross farm income found a new equilibrium above \$10,000,000,000 a year.

In South America, South Africa, and Oceania grain production was still further expanded—far beyond the high level of 1920. In 1909–13 the crop of all cereals was 15,000,000 tons; in 1920 it reached 17,000,000 tons; but in 1925–30 it averaged 21,000,000 tons a year. Grain exports similarly increased. In 1909–13, 7,000,000 tons annually were sold abroad; in 1925–29, an average of 10–11,000,000 tons.

Argentina, Australia, and New Zealand strengthened their positions as exporters of meat, all exporting far beyond prewar volume, a better quality of meat, more being chilled and less frozen. Australia increased her prewar sheep flock from 85,000,000 head to 105,000,000 head in 1929. New Zealand not only increased her flock during the same period from 24,000,000 to 29,000,000 head, but also increased the annual slaughter from 7,000,000 to 11,000,000 sheep. Still more impressive was New Zealand's advance as a dairy producer. In 1913 she exported 19,000 tons of butter and 31,000 tons of cheese; in 1929 a total of 84,000 tons of butter or more than four times as much, and 90,000 tons of cheese, or nearly triple the prewar shippings.

How extraordinary to see New Zealand's dairy farmers (utilizing the world's most ideal dairy climate) compete vigorously over a distance of 12,000 miles in the butter markets of London with their antipodes, the Danes, who ship their butter from Esbjerg to Southampton overnight! New Zealanders can graze dairy herds 12 months a year while in Denmark cows must be fed in barns 210 days out of every year. Yet the Danes kept far enough ahead by lowering costs of production and improving the quality of their product that they continued to beat the competition from the other end of the globe. In 1913 Denmark exported 91,000 tons of butter, a volume New Zealand reached in 1929, but by then the Danes were selling 159,000 tons abroad.

Great progress was made also by the world's plantation economy between the western Pacific and the Indian oceans, in the Caribbean, and along the eastern and western coasts of Africa. All these areas, as well as the Asiatic mainland, profited immensely from the powerful resurgence of international trade. It is futile to try to trace even in its major outlines the bewildering mass of changes in all those areas. A

few highlights and global data must serve to indicate the nature of economic changes.

The world's output of coffee, tea, and cacao, compared with 1909-13, had almost doubled by 1929. The coffee crop of 1929-30 was 1.9 million tons, compared with 1.2 million tons before the war; the 1929 tea crop 436,000 tons instead of 286,000 tons; and the 1929 cacao crop 510,000 rather than 230,000 tons. World exports in the precious citrus fruits had increased from 1.1 to 1.6 million tons, and the export of bananas from 1,000,000 to 2,000,000 tons. All these exported crops brought food to the industrially advanced western countries, and thus improved the diet of the broad mass of the average people there, but they did immeasurably more than that. They in turn brought purchasing power to the least advanced countries, and in response to it moved industrial goods to the people who most needed them. In fact, the same ships that carried on one route cargoes of tea, sugar, cocoa, quinine, spices, and tapioca from Surabaya to Rotterdam, carried bicycles, sewing machines, and a thousand and one miscellaneous other goods back to the Javanese people, who could afford to buy them because they earned wages on the plantations which raise the tropical export crops.

The most remarkable progress in this direction was the improvement in the trade of sugar, oilseeds, nuts, and rubber. The following tabulation shows how much more oils and oilseeds were moved in the world's export trade in 1929 than in 1909-13: *

Commodity	1909-13 (metric tons)	1929 (metric tons)	Increase in Per Cent of 1909-13
Peanuts	641,000	1,678,000	161
Coconuts and copra	693,000	1,349,000	95
Palm nuts	329,000	562,000	71
Soybeans	809,000	2,738,000	238
	<hr/> 2,472,000	<hr/> 6,327,000	157
Peanut oil	57,000	156,000	174
Coconut oil	115,000	432,000	276
Palm and palm kernel oil	225,000	314,000	40
Soybean oil	42,000	164,000	290
	<hr/> 439,000	<hr/> 1,066,000	143

* Data from *International Yearbook of Agricultural Statistics* (Rome, 1930).

The oilseeds are crops grown partly by peasants or collected from wild trees by natives or produced on large-scale plantations. Their shipment meant additional income to many millions of farm people in Manchuria, the Philippines, the Netherlands East Indies, British Malaya, Ceylon, and West Africa. The ingenuity of Dutch geneticists who bred sugar-cane varieties with exceptional yields was responsible for great curtailments in costs and a great expansion of tropical sugar production, particularly in Java, the Philippines, Cuba, and Puerto Rico. Sugar production increased as follows: ¹⁰

Type	1909-13 (metric tons)	1929 (metric tons)	Increase in Per Cent of 1909-13
Cane sugar	9,581,000	18,050,400	88
Beet sugar	7,940,000	9,371,500	18
World total	17,521,000	27,421,900	46

This progress again moved purchasing power into the tropics. A still more startling tropical development was initiated by the triumphant march of the combustion engine in the United States and some European countries during the same period. The exports of rubber from tropical jungles rose from a mere 147,000 tons in 1909-13 to 1,179,000 tons in 1929.

The foregoing résumé demonstrates how during the twenties the agricultural world everywhere regained its prewar complexion—under the pall of smoke over the belching stacks in Belgium, in the Ruhr valley, on the British Isles as well as in rural Poland, Italy, and Bulgaria; in the United States and Argentina as well as in Manchuria and Java. Technological progress, a rising physical volume of production, the free flow of goods from origin to final utilization and the flow of investment capital from capital surplus to capital deficit countries—these most vital processes in the economic realm had all been restored to full vitality. From this standpoint the twenties were an era which not only proved the immense recuperative power of the modern world economy, but did much to increase its capacity to produce and distribute wealth.

Seldom has the world been so far along its way toward the eternal goal of reducing poverty and conquering the shortage of means of

¹⁰ International Institute of Agriculture, *The Agricultural Situation, 1929-30* (Rome, 1931), p. 23.

supplying the basic as well as the more refined needs of man as it was in the years 1919 to 1929, despite all the drawbacks. This was true because the ingenuity and doggedness of hundreds of millions of individuals were harnessed to restore order to the house which the war had so cruelly ravaged. Indeed, even in Soviet Russia, the only part of the world where collective initiative had been substituted for the initiative of individuals or groups, this process was temporarily successful. Under Lenin's New Economic Policy (NEP), private property in land was reaffirmed and a certain freedom for private initiative and competition granted. So remarkable was the recovery of farming under the leadership of the more efficient peasants that all at once Russia reappeared on the world market with sizable grain exports. However, the efficient "kulaks" were so much on the upgrade that they constituted a major menace to the political future of a collectivist society.

Assuring though the record production and trade of these years were, the cataclysm that followed was shocking and discouraging. It will be seen, however, that the economic disaster, which was to become the forerunner of a much more tragic and bloody one, had its initial roots in the diehard isolationism prevailing among the Allies when the last shells exploded in 1918.

Farm Price Decline: The Portent of Depression

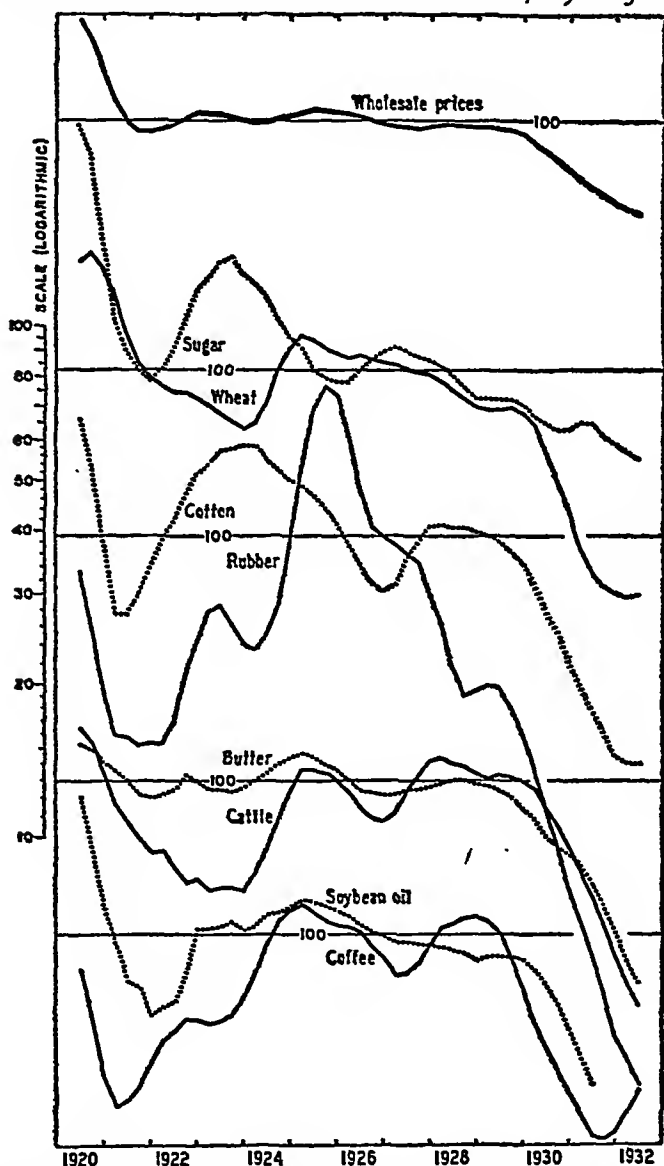
The world depression did not begin with the collapse of the New York Stock Exchange in autumn 1929. Early in 1928 the world market prices of some of the world's chief agricultural staple commodities began to slide downward from the average level of the preceding three or four years. Prices had oscillated before, but now the downward shift was so insistent that the occurrence of some major structural change in the market became evident. Indeed, the slide continued almost unabated for four or five years. From 1928 to 1931 the weighted price index of the five grains (wheat, rye, barley, oats, and corn) fell from 158 to 55 (1909-13 = 100); the index of wool prices from 190 to 60; of cotton from 165 to 50. Copra, other oilseeds, and tea were the principal exceptions. Within a year and a half the prices of linseed, coffee, mutton, butter, and eggs followed suit. Since prices are not only the powerful, delicate mechanism which moves the goods and orients and adjusts production and consumption, but at the same

time the best barometer for the "weather" in modern economy, this price collapse demonstrates disturbances of typhoon intensity. The immediate result was a rapid fall in farmers' gross income in all the exporting countries, with a resulting curtailment or stoppage of their purchases of industrial goods. Industrial production began to fall off in the latter part of 1928. Curtailment of agricultural orders for machinery and all other goods that farmers buy added momentum to the tendency of business in industries to decline. While the situation had become precarious and alarming in many an overseas agricultural exporting country, one could not yet speak of a universal agricultural crisis in 1928 or 1929. Only when the volume of industrial production began to shrink alarmingly, when the rate of bankruptcies rose steeply, and when stagnation gripped the economies of the leading nations did agriculture become financially prostrate.

To disentangle and to explain to the reader's satisfaction the entire nexus of correlated processes and policies during the twenties which led to this state of affairs would fill the rest of this book. It must suffice, therefore, to indicate roughly only several of the major causes and effects as we see them.

When we surveyed the remarkable progress in physical output of farm products and touched upon the triumphant march of farm technology, we deliberately did not mention that this meant real improvement for producers and consumers of food and fibers only in so far as the farm products could be absorbed by consumption at a profitable rate of exchange with industrial goods, i. e., at relative prices, which made it possible for farmers to carry on while maintaining and improving their farms, paying interest and taxes, and consuming their share of industrial goods. This requires above all a certain balance between production and consumption of specific agricultural commodities. If twice as much wheat, for instance, is produced as can be sold at prices covering the costs, the disproportion means a serious maladjustment and an unbalanced utilization of resources. This overexpansion of production in view of existing demand, however, is exactly what happened in the later twenties. Henry A. Wallace, then secretary of agriculture, wrote in his frank and courageous pamphlet, *America Must Choose*, about this aspect of the agricultural depression: "From 1926 on it became increasingly plain that modern technique applied to agriculture and to the production of other raw materials was heaping up a world-wide over-

CHART III. THE PRICE DECLINE OF MAJOR AGRICULTURAL COMMODITIES IN THE WORLD MARKET, 1920-32 *



* Data for wholesale prices (United States) from U. S. Dept. Agri., *Yearbook*; data for sugar (New York, wholesale, 96° raw centrifugal) from U. S. Dept. Agri., *Yearbook*; data for wheat (British import prices) from Food Research Institute files; data for cotton (Liverpool, American middling) from U. S. Dept. Agri., *Yearbook*; data for rubber (New York, #1 smoked rubber sheet) from U. S. Dept. of Comm.; data for butter (Copenhagen export price) from U. S. Dept. Agri., *Yearbook*; data for cattle (Buenos Aires, choice steers for chilled beef) from U. S. Dept. Agri., *Yearbook*; data for soybean oil (Hull, Engl.) from Faure, Blattman and Co., *Review of the Oil and Fat Markets*; data for coffee (New York, Santos No. 4) from *Survey of Current Business*, April 1942, p. 22.

supply. World overproduction played an important part in the ever-descending spiral which began in 1930."¹¹

Low interest rates and abundance of capital had led to an overinvestment in agricultural production capacity in overseas countries. Too much confidence in the existing price level as well as the possible expansion of demand led to overproduction of many staple commodities. Technological progress and curtailment of costs by the most efficient producers, still able to expand when prices dropped and yet realize a profit, only added pressure when the limit of demand was reached. Such conditions are normally cured by individual adjustment. High-cost producers must stop producing and shift to other farm products or shift into other occupations. Such adjustment is never accomplished without hardship, loss of capital, and discomfort; it is one of the normal functions of an economic system under civil liberty and private initiative.

Farm Relief and Market Monopoly

Unfortunately, farmers in all parts of the world had not forgotten that during war, governments have the power to dictate and fix prices, to regulate, control, and correct economic conditions in all segments of the economy. Governments had assisted them in their efforts to produce food under trying circumstances during the war years, and had guaranteed profitable prices fixed by decree. Immediately after the war, farmers in most countries wanted the freedom to buy and sell at whatever prices they could obtain restored to them. They turned their backs upon planning, assuming that prewar conditions would return. But when the effect of changes in technology, recovery of European production, expansion in some export areas, and certain unforeseen shifts in consumption subjected their products to severe price pressure, farmers reversed their stand and called for government aid. As time went by and prices still continued to decline, the stabilization of prices either by government decree or by the collective action of farmers became the watchword in nearly all countries except Denmark and Holland. This movement gained momentum as the farm leaders saw how other raw material producers, particularly in mining and heavy industries, had tried in the twenties to reduce the risk of their business by manipulating the domestic and

¹¹ Henry A. Wallace, *America Must Choose* (New York, 1934), p. 6.

international markets with cartels and pools. The twenties actually were the era of the greatest expansion of international cartels, of which some 400 finally were formed. The farmers simply tried their hand at a game which was widely played in so many other branches of the modern economy. They tried it both ways: by private group action as well as with the authority of the government.

Coffee stabilization in Brazil, wheat pooling in Canada, "orderly marketing," i. e., feeding the market through farmers' co-operatives in the United States, fruit market control in British Columbia, rye stabilization in Germany—all were identical in purpose. In all cases the aim was to reduce the risk of further price decline and to avoid the otherwise necessary adjustment in production through individual farmer action. Collective manipulation of the market, curtailment or elimination of competition were presumed to offer a solution far superior to individual adjustment; superior because it was believed to obviate the painful process of lowering costs and prices and of eliminating the marginal soil as well as the marginal farms and farmers.

With appalling speed the revolt against individual adjustment swept the globe. Astute lawyers in many countries developed the strategy for such changes in the legislation so as to permit the limitation of competition without running afoul of the antitrust laws. Legislation favoring agricultural co-operation was stretched to the limit in order to permit farmer co-operative associations to adopt market policies which would involve curtailment of competition, such as the Webb-Pommerene Act. The co-operative form of enterprise had originally been conceived by legislators in all countries as a means of keeping alive and reinforcing fair competition in a profit and loss economy, and thus to operate as a safety valve against monopoly. Now, in many a country, it was interpreted as the appropriate entry for the farmers to the game of monopoly. In the United States Mr. Aaron Sapiro sold the idea to many American co-operative associations on the Pacific coast and in the northwestern grain areas. Remarkable progress was made by the co-operative associations in improving the quality of the product, in standardizing and grading, in the techniques of assembling, packing, shipping, and storing the produce. Yet, basically, the pressure of declining prices caused a change in philosophy toward the market. Control of the market, rather than adjustments to it, became the great goal.

Indeed, in view of the rising tide of violations of the rules of com-

petition, it seemed that the only proper course of action was to play a fair game of monopoly not only in facing the trade and the consumers but also when dealing with all other segments of the economy, in view of organized groups in labor and industries in particular. Whether one got the big stick by the patronage of "Father State" or by signing up at least the crucial "80 per cent" of the production made little difference. It was surprising that this sort of scheme had not been introduced much earlier.

The Failure of Monopolistic Efforts

While this new idea fermented in the minds of the farmers, by no means all or even a solid majority of them were convinced that the scheme would work. When, within a short time, it did become clear that the plan was a dismal failure, the reaction varied from outright condemnation of the idea and "I told you so" to the conviction that what had failed had to be tried again and again because it would replace anarchy by order. At any rate, it was discovered early in the discussion of these schemes with farmers that it would become necessary to curb production and, if need be, to reduce it accordingly by some key for all farmers. But whenever this point was touched upon the debate subsided, because it was quite clear that any enforcement of production restrictions would cut deep into the roots of the tree of constitutional rights and the basic institution of property.

Not only some unlucky few of the schemes, but practically all of them, failed. Some of the plans led national banks close to insolvency; others wrecked well-established farmers' co-operative associations doing many millions of dollars' worth of business annually; but much worse than causing business failure, all contributed their share to the severe agricultural crisis that brought bankruptcy proceedings to millions of farmers in many a progressive land. Essentially, these schemes of monopoly failed because they attempted to square the circle of keeping production unduly profitable for all producers, never attempting to adjust production to demand. All of them tried in principle to coerce or corner the market by arbitrarily fixing prices or by creating a price-lifting vacuum by undersupplying the market. This policy shrank the consumption, but over-expanded production machinery continued to operate. The discrepancy was overcome by building up and carrying over increasing stocks. The following

tabulation shows how the year-end world stocks of agricultural staples increased after 1927:¹²

Commodity	Unit	1925	1926	1927	1928	1929	1930
Wheat	million tons	8.8	10.9	10.9	15.4	15.9	15.9
Sugar *	million tons	4.1	3.9	4.2	4.7	5.6	7.0
Coffee	million tons	.6	.7	1.1	1.1	1.4	1.6
Cotton	million tons	1.6	1.9	1.7	1.7	1.8	2.2
Silk	thousand tons		16.0	15.0	16.0	24.0	48.0
Rubber	thousand tons	152.0	234.0	266.0	233.0	313.0	454.0

* Sugar stocks in Germany, Czechoslovakia, and Great Britain only.

Timoshenko calculated composite indexes of stocks and prices of cotton, wheat, sugar, rubber, silk, coffee and tea giving appropriate weight to cash commodities. Stocks rose from an index number of 100 in 1923-25 to 287 in June, 1932, while prices fell from 100 to 23.¹³ These stocks, which could not actually be offered for sale, were supposed to be under quarantine, and thus unable to affect the market. However, it became evident that their very existence progressively depressed the markets, no matter whether government or private pools held them. "Grain in jail" was still grain, and intelligent grain merchants could not afford to disregard the probability of the release of these stocks. Only a decision to destroy the surplus could produce any effect and release its influence upon the market, as Brazil knew when that country stabilized her coffee prices. Agricultural monopoly failed because the means to coerce consumers to buy at high prices the volume they would voluntarily buy at lower ones had not yet been invented. This held particularly true in the case of commodities with an elastic demand.

While the various plans intending to remove the need of adjusting production and costs were effective to some extent within the boundaries of a tariff-protected domestic market, they failed to establish complete control over other producing countries or countries which were potential producers. As was usual in the case of cartels or guilds, their price-lifting or price-maintaining policies created an ideal opportunity for outsiders to expand or to begin production in

¹² Ernst Wagemann, *Struktur und Rhythmus der Weltwirtschaft* (Berlin, 1931), p. 306.

¹³ Vladimir P. Timoshenko, *World Agriculture and the Depression* (Ann Arbor, 1933), pp. 662-663.

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gold exported by countries that could not make payments in goods over her tariff walls and gold shipped by frightened foreign capitalists who, distrusting currency stability, hoarded gold in American banks. This accumulation had evil deflationary effects, raising the price of gold and creating a scarcity for currency purposes and thereby a scarcity of credit in the note-issuing banks.

Germany's inability to establish a favorable balance of payments had no serious effect so long as America continued to lend capital to her and so long as her export trade in Europe, especially with France, the Lowlands, and Scandinavia maintained itself. The moment this credit structure broke, and exports were shut off, none but the most drastic measures could prevent another collapse of the German currency.

The reader may wonder why, in a book on the reconstruction of world agriculture, so much space should be devoted to a detailed analysis of Germany's reparation transfer and other financial difficulties, since after all, Germany seemed to be a relatively small item in the modern world. We may quote on this point the Wiggin-Layton Committee, appointed by the London Conference of 1931: ¹⁵

On the other hand, Germany plays so important a role in the economic life of the world and in particular of Europe that until the situation in Germany improves there can be no general recovery from the existing state of depression. . . . We would point out that the case of Germany provides the most forcible illustration of the fact that in recent years the world has been endeavoring to pursue two contradictory policies, in permitting the development of an international financial system which involves the annual payment of large sums by debtor to creditor countries, while at the same time putting obstacles in the way of the free movement of goods. So long as these obstacles remain, such improvements of capital must necessarily throw the world's financial balance out of equilibrium.

Aside from the opinion expressed in this document, it may perhaps suffice to remind the reader that not only the center of the financial debacle of the depression lay in Germany and Austria, and that during and after the depression the complete cartelization of agriculture was accomplished, but also that economic nationalism, the direct preparation for military aggression, was driven to the extreme in Germany. World War II, a much greater catastrophe than the depression,

¹⁵ Bank for International Settlements Committee, Albert H. Wiggin, Chairman (appointed on the recommendation of the London Conference, 1931), *Report* (Basle, Switzerland, August 18, 1931), pp. 1, 10.

had its origin in Germany. These facts alone not only justify but demand a closer analysis of the German storm center.

Farm Price Autarchy in Germany

As in the United States and elsewhere, German farmers were clamoring during the twenties for government aid to shunt aside the impact of foreign competition as well as falling prices in the domestic market. They derived the claim for such action readily and, to some extent, rightly, from the government's campaign for all-out agricultural production, the *Hilfswerk der Landwirtschaft*. This early forerunner of the "battle of production" was a patriotic appeal supported by an overgenerous policy of easy farm credit. The loans were in some measure offered by public insurance corporations, but were also fed directly and indirectly by American loans. The inflation had left German agriculture practically free of mortgage or other debts, but within four years the gigantic sum of 12.5 billion marks' worth of mortgages was accrued and recorded in the farm mortgage registers. This sum equaled the prewar debt, with the difference that it consumed twice as much interest, that taxes were a multiple of those before the war, and that farm wages were fixed at a level much higher than the prewar level. In 1928 the author was charged with a preliminary investigation of farm indebtedness in Germany and found that by the end of 1928 nearly 40 per cent of all the large estates of eastern Germany were overindebted, many of them as high as 200 and 300 per cent.¹⁶ Family farms were not yet similarly afflicted because their main products still sold at better prices, high farm wages did not enter into their accounts, and their tax had not increased as had that of the large estates. Later the depression was to spread to the family farms as well.

In parliament the farmers, under the leadership of large-estate owners, and soon of the nazis, campaigned vigorously for price fixing. The social democrats were in coalition with the conservatives, so the stabilization of the prices of some staples was begun in 1928 with sugar, a surplus of which the country had to export in the world market. The technique applied was simple. The secretary of agricul-

¹⁶ Cf. Karl Brandt's unsigned official brochure: Preussische Zentralgenossenschaftskasse, *Die Lage der landwirtschaftlichen Betriebe in den Östlichen Landesteilen* (Berlin, 1928).

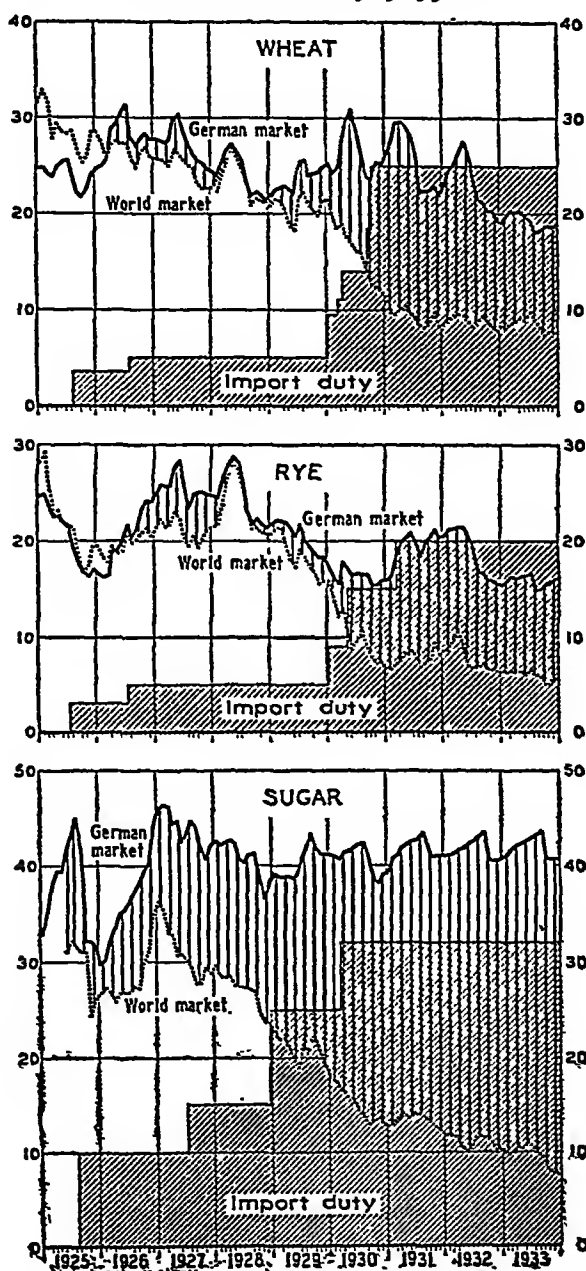
ture was authorized to manipulate a flexible import duty in such a way as to maintain a certain desirable price for sugar. Like all flexible protective arrangements, the sugar duty proved its flexibility only in an upward direction. The sugar industry was compelled to join an export cartel, to process for the domestic market an annual quota small enough to leave no large surplus, and to export the remainder at a loss. In later years the export was avoided by restricting processing to the domestic quota of market supplies through the co-operative associations.

The German experiment with the sugar market stabilization worked, but its ramifications were far-reaching. To make the foreign trade of staple commodities dependent upon "flexible autonomous tariffs," which can be raised overnight, creates an insecurity that ultimately must reduce the exchange of goods by private initiative to the minimum. Domestically the economic effects were no less severe. Production was possible only with processing quotas. Acreage was thereby frozen on its incidental location. A shift of sugar-beet acreage to smaller farms in the high-yielding western and southern areas was blocked. Land values began to depend to some extent on quotas from that time on.

The next experiment concerned the "stabilization" of the rye market, which overflowed with an export surplus and, under the impact of the decline of world grain prices, showed depressed prices. This experiment passed through successive stages of failure and temporary success, but in the end it ushered in the policy of a completely planned autarchic agricultural economy.¹⁷ It was the admitted aim from the outset to emancipate the German rye market and soon the entire German grain market, and with it grain prices, from those beyond the borders. This was accomplished by a whole arsenal of new tools for market intervention and in its later stage for a regimented economy. Such measures comprised import duties of exorbitant height, amounting to 200 per cent or more of the domestic price level, import quotas, open market purchases by government-owned corporations, a government import monopoly, the maintenance of large public granaries, denaturing of bread grain and releasing it under subsidy as feed grain or for industrial purposes, compulsory quotas

¹⁷ Karl Brandt, *The German Fat Plan and Its Economic Setting* (Stanford University, 1938), ch. VIII.

CHART IV. THE SEPARATION OF AGRICULTURAL COMMODITIES FROM THE WORLD MARKET BY TARIFFS AND OTHER PRESSURES IN GERMANY, 1925-33 *



* Data from *Statistisches Jahrbuch für das Deutsche Reich* (1936).

for the utilization of domestic grain, the compulsory extraction rates—to name only the most essential of these measures.¹⁸

It was found that the stabilization of the rye market required the expansion of all the measures to wheat, and in the final analysis to all grains, grain products, and by-products, as well as to potatoes and potato products. Several years of experimentation with the public control of the markets ensued before it was discovered that competitive processes always managed to undermine the new manipulated equilibrium, and that hence government control had to be expanded to include more and more products. Only in 1933 were the last holes in the system plugged up, as Chapter III will demonstrate.

Chart IV shows how prices behaved under this new strategy. It cushioned the worst shock of the world agricultural depression and put a floor under the prices of some staple commodities; it reduced imports, and thus gave German farmers a chance to expand production even if the total volume of consumption should shrink; psychologically it comforted consumers with the assurance that no food shortage due to a lack of transferable means of payments and resulting inability to import foreign food would arise; and it gave labor unions and other socialists the impression that a further step toward the socialization of basic industries had been taken.

World-wide Tariff Retaliation

Of course, whatever direct effect this policy may have had on domestic markets, it was purchased at a heavy price. All the agricultural exporting countries suffered that much more from surpluses and lowered prices. In retaliation, they replied with higher tariffs and smaller quotas on imports of German industrial goods—their only weapon at hand. Thus France and Belgium, Holland and Denmark, Norway, Sweden, and Finland—Germany's best customers for industrial goods—hit back. Tedious negotiations on import quotas for literally thousands of single items ensued. The loss in industrial exports further diminished German industrial employment and the resulting shrinkage of consumer purchasing power exerted still more pressure on the prices of all agricultural products having a more elastic demand. What the German farmers gained in leeway for more

¹⁸ Karl Brandt, "German Agricultural Policy—Some Selected Lessons," *Journal of Farm Economics*, February 1937, XIX, 287-299.

production they lost by greater price pressure in the domestic market.

This same policy of hitting back although it hurt both sides was applied to America's Smoot-Hawley tariff. Violent campaigns of anti-American and anti-German boycotts were waged in Switzerland, Germany, France, Denmark, Spain, and many other countries. Like a world-wide epidemic the buy-only-domestic-goods campaigns spread from country to country: Buy British, Empire-Marketing Begins At Home, Buying Swiss Saves Swiss Workmen Jobs, Be A Good German: Drive A German Motor Car—these were some of the slogans splashed on millions of posters. Nowhere did the nationalistic policies find anything like unanimous support. The battle waged between exporting manufacturing industries, trade, and exporting farmers on the one side, and protected industries and farmers on the other; consumers siding with either party. In most of the countries, the majority of economists protested strongly; but under the onslaught of pressure groups, and the desperation of currency boards, they protested in vain.

From his participation in the struggle against the rising tide of radical economic nationalism in Germany, the author recalls the chief argument used against the suggestion of taking the initiative in reducing tariffs and expanding foreign trade. It was claimed that for her part, Germany was so weak a party in the world market that she could not stem the tide, but would be drowned if she made the effort, and that the only alternative left was to try to be one jump ahead of the panic-stricken herd. Sadly enough, this was the inspiration of the action taken in almost all the leading countries, irrespective of their immense potential power.

When the twenties drew to a close, the "reconstructed" world fell apart, and world trade declined rapidly. Everywhere the government was called upon to reduce domestic agriculture, industry, and commerce, as each had to weather the storm. Everywhere the farmer's plight was a most serious concern of the government, and efforts greater than ever before in history were made to give effective relief. This new farmer-consciousness on the part of governments and the general public was due partly to the recollection of the food troubles of the war years and the anticipation of a recurrence of food shortage in importing countries. It was also strengthened by considerations of national defense; but to a much larger extent it was the result of the farmer's improved political organization, and an incomparably more

effective representation of his demands. The mere thought of a revolt by the organized farmers who could join forces with other powerful groups could not fail to make any statesman very attentive and considerate toward the demands of the agricultural population.

Organized Farm Pressure

This evolution was international in scope. It is even hard to say whether the farm blocs wielded greater power in countries where much food was imported or where a large part of the farm produce had to be marketed abroad. That farmers were politically very influential in predominantly agricultural countries is natural. That they began to influence national policies decisively in industrial countries where they constitute only a minority was something new and decisive for the events to come in the international panorama of agricultural history.

In the United States the twenties saw the rise of the new farmer organization, the Farm Bureau Federation, as well as the older National Grange and the Farmers' Unions. In the 1870's and 1890's the farmers had gone through serious agricultural depressions, too, but after the depression of 1921 and during the period from 1921 to 1929, they shaped a new political platform which gradually gained more and more popular support. The slogan of "Equality for Agriculture," first formulated by George N. Peek and General Hugh S. Johnson in 1922 became the watchword for the farm legislation of the following decade. From 1924 to 1928 Senator McNary and Representative Haugen introduced many bills all trying to emancipate the domestic price level from the one abroad—something that the German farm legislation of 1928 and later years did accomplish. The bills, increasingly acceptable to Congress, were passed in 1927 and 1928, but vetoed by President Coolidge.¹⁹ The policy incorporated in these bills was centered around the idea of dumping in the world market an amount of goods sufficient to lift the domestic price level high enough to make farming generally profitable. What could be attained in an importing country by restricting imports required much different tactics in an exporting country. A generally profitable

¹⁹ E. G. Nourse, J. S. Davis, and J. D. Black, *Three Years of the AAA* (Washington, 1937), ch. I; and Persia C. Campbell, *American Agricultural Policy* (London, 1933), ch. II.

condition for farming was to be measured by the purchasing power of farm products during the prewar years 1909-14. While prosperity in the cities was advancing toward its peak in 1927 and 1928, the general sentiment in America increasingly favored vigorous relief policies for the farmers, who had been unable to share equally in the booming business.

President Hoover, who had opposed the McNary-Haugen approach as well as the export subsidies of the farm debenture plan, gave his support to a newly drafted farm relief policy which was based on the same ideas of industrial cartelization as those behind the Canadian wheat pool, Mr. Sapiro's co-operative control of market supplies, and the German sugar and grain stabilization scheme. In his nomination address in 1928, Mr. Hoover said, "A nation which is spending 90 billions a year can well afford an expenditure of a few hundred millions for a workable program that will give to one-third of its population their fair share of the nation's prosperity. . . . The object of our policies is to establish for our farmers an income equal to those of other occupations."²⁰

The Agricultural Marketing Act of June 15, 1929, created the Federal Farm Board assigning to it the job of solving the "surplus" problem by placing "the industry of agriculture on a basis of economic equality with other industries."²¹ It was charged with the responsibility of preventing and controlling surpluses in any agricultural commodity "through orderly production and distribution, so as to maintain advantageous domestic markets and prevent such surpluses from causing undue and excessive fluctuations or depressions in prices for the commodity."²² The Board was equipped with a revolving fund of \$500,000,000 to enable producers to get a high degree of control.

The experiment failed because it dealt with symptoms not with the disease. It attempted to avert the effects of overexpanded production without curtailing production. We saw earlier that the same experiment worked in Germany after initial failures. It worked, in fact, in all the importing countries which adopted the policy, because there this policy simply deprived foreign farmers of their right to supply the market, handing that right over to the domestic producers.

²⁰ *New York Times*, August 12, 1928, p. 2.

²¹ E. G. Nourse, J. S. Davis, and J. D. Black, *op. cit.*, p. 8.

²² *Ibid.*

In exporting countries which had to bear the full burden of the measure inimical to their foreign sales, nothing but curtailment of production could help unless a general offensive in foreign trade policy could reverse the trend toward economic nationalism. Such a constructive initiative was nowhere contemplated, because the belief still prevailed that the safest method of coping with the admittedly discouraging situation was confined to individual self-help. Judging from the literature on the subject, perhaps the clearest theoretical conception of the necessity of revising the entire strategy of fighting the depression, was to be found in England, Germany, and Switzerland. However, only one single country was strong enough to take the initiative to crack the deflationary downward spiral and to initiate a powerful offensive toward expansion of foreign trade. That country was the United States and had Secretary Hull's freer trade policy been adopted in place of the disastrous Smoot-Hawley tariff with its underlying *sauve qui peut* and "may the devil take the hindmost" philosophy, the world might have been spared the agony of further depression and the greater agony of World War II.

CHAPTER III

World Agricultural Trends in the Thirties to World War II

NOTWITHSTANDING the conspicuous flood of conferences, any effective effort to co-operate on an international scale in the fight against the depression was lacking. Each nation was left to work out a solution separately, for the atmosphere created by the refusal to disarm and to pay war debts left the former Allies distrustful and bitter. Nevertheless, decentralized adjustment might lead gradually to a clearcut correction of untenable conditions throughout the world and prepare the ground for an era in which collaboration again would be easy and profitable. In a global sense, such a process actually did work. Finally it even brought to an end the contraction or stagnation of output and exchange in the world economy. Yet the picture of a separate house cleaning by each nation for itself is misleading. The affairs of each nation were so closely intertwined with those of several or all nations that no matter what move one of them made, all were vitally affected. And as many tried to accomplish results in a common market, their actions were competitive and the effects often cumulative.

When, for example, the decline of industrial production and of the general price level grew more serious, American banks continued to tighten their credit policy. Interest and discount rates were raised. This action had serious international repercussions in all the capital and money markets abroad.

Economic Crisis under Way

In 1930, many leading American businessmen considered it possible, if not probable, that the depression would soon give way to a new cycle of prosperity. There was no evidence to support such optimism. World agriculture revealed no signs of lower production. In many countries the output of food and fibers even continued to

increase. Actually, the world economic crisis had just begun. Industrial employment continued to fall. The volume of goods transported declined. Prices continued to sag. Wage income decreased and business failures became more numerous.

The origin of these conditions was to a considerable extent directly connected with some of the phenomena in the agricultural exporting countries related in Chapter II. Too rapid expansion of the production of leading staples in view of a much slower growth in demand, delayed adjustments, and the accumulation of more burdensome stocks had caused a gradual but steady decline in the price of these commodities. Commodity research has supplied a wealth of evidence that the fall of prices from 1928 on was due to these maladjustments in production. Price-supporting measures in exporting countries and efforts in importing countries to protect their farmers against price pressure and increased imports aggravated the maladjustment. In a situation of relative overproduction, farmers in importing countries began to expand output. High import duties paralyzed the power of low prices to stimulate consumption. The demand for every form of utilization and consumption can respond only to the prices asked. A low price on Australian wheat c.i.f. Genoa is no incentive to an Italian flour miller if he has to pay a duty of 50, 100, or even more per cent in addition. This is exactly what happened in many of the Continental importing countries. Not only was production duplicated and forced into high-cost land, but consumption was fettered as well.

The price decline of these principal products profoundly affected the income of the agricultural exporting countries. From 1925 to 1929 the value of exports from the chief European exporting countries increased by about 18 per cent, while exports from agricultural exporting countries (excluding Russia) increased only minutely. In 1929 these agricultural exports were less than 1 per cent higher than in 1925, and 4.4 per cent higher than in 1926. Imports of the European agricultural importing countries had risen from 1926 to 1929 by 11.7 per cent.¹ They could rise because foreign credit flowed freely to them from 1924 to 1929, the years of industrial prosperity. Credits made up in their balance of payments whatever was needed to close the gap between export returns and service on foreign loans.

¹ R. R. Enfield, "International Debts and their Influence on Agricultural Prices," *Proceedings of the International Conference of Agricultural Economists, Third Conference, 1934* (London, 1935), p. 399.

When the price decline of food staples and raw materials diminished in 1928 and export income and further borrowing from abroad were impossible, these countries became unable to meet their financial obligations. Such was the situation for Argentina, Canada, Australia, New Zealand, South Africa, and India. In 1924-25 these countries had a credit balance of £154,000,000 on trading account. The interest and dividends they owed amounted to £141,000,000. In 1929-30 their credit in merchandise trade had fallen to £53,000,000; interest and dividends on external debts had risen to £155,000,000.² In 1929-30 exports of these debtor countries declined suddenly in volume and value in view of bad crops and lower prices. Unable to withstand the pressure upon their currencies, they were the first to abandon the gold standard.

In 1929 and 1930 many countries were unable to maintain the levels of their currencies. Argentina, Uruguay, Brazil, Venezuela, Peru, Mexico, Spain, New Zealand, Australia, and China gave way to the pressure of falling raw material prices by depreciating their currencies.

Collapse of the International Credit Structure

In 1930 the fragile international credit structure, jerry-built from 1924 to 1928 mainly with American capital, suddenly began to disclose deep fissures. A real paralysis of forward action in the banking world soon followed, exhibiting merely routine reflexes to a situation of excessive risk, and bankruptcy procedures mounted. While all further lending virtually ceased, moves were made to reduce earlier engagements.

In the summer of 1931 a serious financial crisis developed in central and eastern Europe and spread throughout the world. The state budgets of eastern European agrarian countries showed rapidly increasing deficits. German and Austrian banks had borrowed on short term in New York and London, and extended commercial loans at home which were either *de facto* or *de jure* on long term. Before the Austrian Credit Anstalt became insolvent, the Austrian National Bank, the Bank for International Settlements, and the Bank of England attempted to rescue the Anstalt and avoid international repercussions. The attempt to relieve the Anstalt failed.

² Enfield, *op. cit.*, p. 400.

Soon it became clear that this bank failure was more than an isolated collapse. Banking centers in Europe and the rest of the world were gravely shaken. A real panic and a run on liquid assets ensued. Like a swarm of locusts the frightened creditors, largely from the United States, descended upon central Europe. In a few months they had grabbed whatever cash or security they could obtain.³ This very action generated more insolvency and more depression.

Liquidity at any price was naturally the primary thought of every banker. Shortly afterward, the international capital market was thoroughly demoralized. A few months later, the German market was subjected to the same run of panic-stricken depositors. Gigantic withdrawals took place. In 1924-28 American investors overestimated the stability and resilience of the German business situation and its international underpinnings. They ignored the stern warnings of many European bankers who pointed out that the short term of the bulk of loans in combination with the high tariff policies of the chief creditor and the unsound accumulation of monetary gold stocks in creditor countries created such a great risk of sudden collapse that only very powerful concerted action toward greater stability on the part of the investors could reduce that risk. In contrast to such forewarnings, the prospectuses of loans to German cities, provinces, and banks floated in the United States were overconfident in the extreme. When deep distrust of the international financial situation eroded their boldness, American investors all at once became eager to clear out of the European investment market. The flight of foreign investors and depositors in turn chilled European depositors. They, too, withdrew their balances, preferring to hoard gold or dollar notes, and renounced even the most tempting interest offers and paying charges for securing their deposits.

Unfortunately, the American creditors followed their routine reactions to the developing risk of heavy losses. In their cumulative effect, such measures were disastrous. American bankers were led into flight and panic by the public utterances of Dr. Hjalmar Schacht, supposedly an impartial German statesman merely protecting his country's real interest. Consumed by insatiable ambition, this versatile and indefatigable politician in the cloak of a banker, resigned

³ J. B. Condliffe, *The Reconstruction of World Trade* (New York, 1940), pp. 79-98.

from the presidency of the Reichsbank in 1929 and joined the nazis. He did everything in his power to destroy the foreign investor's trust in Germany's ability to pay. No matter whether or not his dominant motive was the desire for the complete abolition of political debts, his irresponsible opposition to the German administration was instrumental in fomenting the financial disaster. He waited for a proper moment to rescue Germany and rule as its economic master, either under or after the nationalist revolution. Twice before Dr. Schacht had manipulated a crisis in private finance. Few if any of the foreign financiers saw through the game this financial wrecker of the Weimar Republic was playing.

Expansion of Depression under Deflationary Policies

Efforts to adjust overvalued assets to a lower level by foreclosure and bankruptcy or to scale down the debts against cash payment, further weakened the clogged market and made wider depreciation inevitable. In England, in the United States, and in nearly every country on the Continent, orthodox deflationary policies were pursued, interest rates were high, credit policies were restrictive, and wages lowered. In the field of public finance, more taxes were imposed to balance budgets. Only countries in the strongest financial condition could endure this treatment, because the liquidation of defunct assets and their restitution always tied up a considerable portion of liquid funds. In the absence of sufficient reserves, these banks would themselves become tied up. How far any country could proceed in this fashion and at what speed depended not only on the reserve capital available, but equally upon the ability of an administration to withstand the political and social friction engendered by such a policy.

Had currencies been stable and had sufficiently strong action to reopen world trade by tariff concessions come from the United States, the depression might have reached bottom in 1931. But the process of disintegration weakened even the world's greatest banking center, and the demoralization of the international capital market had gone too far.

President Hoover's one-year moratorium on reparations and war debts, proclaimed on June 23, 1931, hardly eased the situation. In a

few months, one of the big German "D-Banks," the Darmstädter und National Bank (called the Danatbank) was the victim of another run. Shortly before, this bank had quietly and successfully rescued one of Germany's most distinguished banks from insolvency. Unable to obtain promptly the indispensable government aid, the bank tried to stop the run by paying out. Within two weeks the Danatbank lost 2.5 billion marks, and thus was bled white. Before the Danatbank closed its doors, the Reich ordered bank holidays and tied up all foreign and domestic credits. These so-called "standstill agreements" were in effect a moratorium. They were contemplated for an initial period of six months, commencing in August, 1931, but were carried on for many years with modifications. Foreign creditors could not withdraw; and if they made any renewals, those could be withdrawn only at a slow rate. In 1931 and 1932 Brazil, Bolivia, Hungary, Uruguay, Chile, Salvador, Greece, Latvia, and Yugoslavia suspended their services on foreign commercial debts.⁴

The panic connected with the run on the Danatbank led to so many withdrawals of deposits from English banks, and attempts to lower wages and salaries created such a critical domestic situation, that on September 21, 1931, the Bank of England abandoned the gold standard. Soon Canada, Egypt, Denmark, Sweden, Norway, Finland, Bolivia, Ecuador, and Japan followed suit. This measure was adopted in different countries for different purposes. In importing countries it was hoped that it would curtail imports, and foster a greater volume of export trade in exporting countries. It was expected in importing countries that the domestic price level would stop falling, gradually rise, put an end to deflationary tendencies, and encourage buying. Too many nations, however, were familiar with the economics of devaluation. Each answered almost immediately with a host of defensive measures. The "stabilizing" effect of the currency devaluations was restricted chiefly to the domestic price level.

It should be evident that the free international exchange of credit had all but ceased to function. Huge credits were frozen. The tendency prevailed to thaw out such frozen engagements rather than to extend new ones. From 1930 to 1933 Germany transferred 7,000,000,000 marks to foreign creditors. Due to foreign currency devaluation, 11,000,000,000 marks of debts were paid off, at the sacrifice of

⁴ George Pavlovsky, "The Course of the Agricultural Depression in 1931-32," *International Review of Agriculture*, January 1933, E1-E41.

the Reichsbank's gold reserve of 3,000,000,000 marks, and by liquidating foreign investments, restricting imports, and forcing exports.⁵

The Spread of Protectionism

In autumn, 1931, France and Switzerland raised tariffs and began to revise their entire policy of foreign trade treaties. The introduction of specific import quotas which had previously been introduced by Germany in her agricultural import trade with Finland and Denmark distinguished the radical change.

In December, 1931, Great Britain abandoned her traditional free-trade policy and embraced import duties with preferential treatment extended to members of the British Commonwealth of Nations, another momentous decision demonstrating most clearly how far the disintegration of a co-operating world had progressed. Many manufactured goods now received the protection of 50 per cent ad valorem duties. By March, 1932, these duties were canceled, a 10 per cent ad valorem duty imposed on almost all imported goods, and duties of 10 to 23 per cent placed on goods formerly protected by the 50 per cent duty. Foreign exchange control was introduced in Denmark, Greece, Bulgaria, Czechoslovakia, Finland, Latvia, Lithuania, Yugoslavia, Italy, Norway, Rumania, and Spain.

During the depression years, the golden era of international trade came definitely to an end. The trade treaties which under the rule of the "most-favored-nation" clause had automatically extended benefits to all nations of good will were abrogated, and replaced by bilateral agreements for very short terms, with quotas in addition to high fixed or flexible tariffs. Combined with most intricate codes of foreign exchange control, these policies manhandled the flow of goods so severely that its volume and velocity shrank daily.

In his sober, far-sighted Richard Cobden Lecture of 1934, *From Protectionism Through Planned Economy to Dictatorship*, the Swedish economist Gustav Cassel stated: ⁶

The fundamental factor in this crisis is the process of deflation which began to develop in 1928 when the United States ceased to export capital

⁵ Hjalmar Schacht, "The International Debt and Credit Problem," *Proceedings of the International Conference of Agricultural Economists, Third Conference, 1934* (London, 1935), pp. 340-395.

⁶ Gustav Cassel, *From Protectionism through Planned Economy to Dictatorship* (Richard Cobden Lecture for 1934, London, 1934), p. 7.

and applied a series of measures in order to restrict credit at home, and when at the same time France returned to the gold standard and began to accumulate gold on an enormous scale. Falling prices forced private business men in all countries to repay debts and to seek the highest degree of liquidity, with the result that for society as a whole liquidity was progressively diminished. Gold was hoarded, and commodity prices in terms of gold were forced down and down again.

By 1932, 6,000,000 people, or one-third of Germany's gainfully employed, were out of work. Civil war was rampant. In the United States, industrial production reached its lowest level, 57.9 per cent of 1928. The picture was not quite as black for the world as a whole. The volume of the world's industrial production for 1932 (1928 = 100) stood at 71 per cent, world trade at 63 per cent.

This world total of industrial production covers two countries whose industrial production was higher than in 1929—Russia and Japan. Soviet Russia, in her seclusion, had reached the point where her powerful efforts toward industrialization were showing tangible results. The centralized steering of her collective economy, fed by a stupendous annual investment and supported by great structural change, created a rhythm of national production quite unlike anything the rest of the world had ever known. Russia was not affected by the world depression. Hers is an economy by no means free of fluctuation, but the variations are not caused by external factors, nor do they coincide with or follow the tidal waves of international business conditions.

Japan felt some decline in employment, but total output continued to increase rapidly after getting under way in 1930 and 1931. The domestic structural growth of this new industrial nation overcompensated for the disturbing effects of the depression abroad.

During the summer and autumn of 1932, the world depression hit bottom. All the statistical indicators that compose a business barometer indicate this. The process of shrinking industrial and commercial activity slowed down and came to an end. It would be a grievous error to assume that the ordinary automatism behind the so-called business cycle brought the economy back to its normal state. The depression was overcome but not without political developments and most sweeping action, changing the world much more in a few years than had World War I and all the events of the decade to the depression combined.

Transition from Failure of Peace to Preparation for War

In 1933 a distinctly new era of history began. It is the era of planned economy, of the rise of political tyranny, of barter trade, of expiring peace, rearmament, appeasement, preliminary annexations, and economic girding for war. It lasted for six and one-half years, ending with the thunder of nazi bombs on Poland, introducing World War II to the world 21 years after the close of the preceding international catastrophe.

During this shameful interlude of 80 months of failure in world statesmanship, heroic efforts were made to re-establish economic stability at least, and a great many of them were concerned with agriculture. When the era came to an end, agriculture was co-ordinated to the needs of planned economy; in many countries, planned economy was introduced for the sake of agriculture, while in others agricultural devices of centralized planning provided the model for controlling industries.

It seems appropriate at this point to mention and briefly survey the history of some of these international efforts to stem the tide of depression. Otherwise we may be tempted to underestimate the gravitation of each nation to seek an independent solution of its economic problems—the common denominator of isolationism. It is folly to assume that peace was lost because the institutions for international communication were nonexistent, or that there was no knowledge about the deplorable state the world was in, or no clues to its causes and its cure. Documentary evidence to the contrary is abundant.

After the years of business recovery, growing stability, and prosperity experienced in the second half of the twenties, along with the reconstruction of world trade, activities of the League of Nations, the International Labor Office, and the International Institute of Agriculture were at their best. When the depression set in these agencies and the various governments involved naturally tried to bring the recent developments before international conferences. Indeed, one can best trace the depression's course and all the pertinent information about it by studying the reports of the long series of conferences held from 1930 on. Reference will be made only to those efforts which had a bearing upon agriculture.

In 1927 and 1928, the League of Nations held two conferences in Geneva to abolish import and export prohibitions and restrictions.

In December, 1929, a third conference was held in Paris. In September, 1929, and in 1930, two further "international conferences with a view to concerted economic action" met in Geneva. The governments of Hungary and Rumania attempted to bring about a "customs truce." Yugoslavia held an agricultural conference in Bucharest in July, 1930, to develop proposals of policies by which the fall of prices could be checked. At the end of that month the governments of Yugoslavia and Rumania conferred at Sinaia on economic policies. In August of the same year an agricultural conference in Warsaw was attended by the governments of Bulgaria, Czechoslovakia, Estonia, Hungary, Latvia, Poland, Rumania, and Yugoslavia. The principal discussion concerned joint action in the foreign marketing of cereals and other agricultural products, and the claim of these agricultural exporting nations that the Continental importing countries should grant priority in their markets to European products. In October, 1930, the agricultural experts of the nations who had participated in the discussions in Warsaw held another conference in Bucharest. A month later the export institutes of Bulgaria, Hungary, Poland, Rumania, and Yugoslavia held a conference in Belgrade. In the meantime the second Commission of the League of Nations had met in Geneva in September to consider how best to combat the agricultural crisis.

Conferences abounded during the next year. In January, 1931, the agricultural experts of the Economic Committee of the League met in Paris. They held another conference the following month under the auspices of the Commission of Enquiry for European Union⁷ and dealt with the problem of disposing of the price-depressing cereal surpluses. In their report the agricultural experts stated that "the conference has noted, that these [agricultural] surpluses, which are concentrated in a small number of countries are less as a whole than the aggregate quantities of European imports needed for the current year." In other words, if one wished, one could solve the problem in Europe without the consent of the overseas exporting countries.

However, the Economic Committee of the Commission of Enquiry swept aside thought of European food autarchy by stating that it "recognized in the first place that the disposal of surpluses of European cereals is not merely a European but a world problem and that

⁷ International Institute of Agriculture, *The Agricultural Situation in 1930-31* (Rome, 1932), p. 8.

a wholly satisfactory solution could be reached only by an understanding between all the parts of the world concerned." The reader will do well to remember this delicate controversy in the discussion of European agricultural policies in World War II, and especially subsequent reconstruction.

In March, 1931, Mussolini opened the Second International Wheat Conference in Rome, organized by and held under the auspices of the International Institute of Agriculture. It was attended by 50 countries and territories, including all the important wheat importers and exporters. The United States alone was not officially represented, but informal observers were present. Three months later the wheat exporting countries held a wheat conference in London, attended by the United States, Argentina, Australia, Canada, Hungary, India, Poland, Rumania, Yugoslavia, Bulgaria, and the Soviet Union. A quota system for the control of wheat exports was given serious discussion, but no action was possible. An agreement did not emerge until May, 1933, after a sequence of meetings.⁸

In May and June of 1931 the Commission of Enquiry for European Union held several meetings in Geneva which dealt with the desolate financial conditions of the Danubian agricultural export countries. In the following year, when the depression's misery was at its worst, three great conferences assembled the world's leading exporters and considered how to start up the wheels of industry once more by international action.

The Lausanne Conference of July, called chiefly to settle the question of reparations, stated in its Final Act: ⁹

In order to achieve the financial and economic reconstruction of central and eastern Europe, the Conference decides to appoint a committee which will be entrusted with the duty of submitting to the Commission of Enquiry for European Union at its next session proposals as to measures required for the restoration of the countries of central and eastern Europe and in particular . . . measures to revive the activity of trade . . . and to overcome the difficulties caused by the low price of cereals . . .

Of most interest is the insistent emphasis in all reports concerning the possibility of ending the depression that was laid upon the financial distress of the eastern and southeastern agricultural sections, and

⁸ J. S. Davis, *Wheat and the AAA* (Washington, 1935), ch. X.

⁹ International Institute of Agriculture, *The Agricultural Situation in 1932-33* (Rome, 1934), p. 109.

the necessity of lifting the grain price level. In July, another conference, smaller but even more significant, was held in Ouchy. It was the result of the energetic campaign toward international action on the part of Belgium's minister, Paul van Zeeland. Upon the invitation of the Belgian king, the representatives of the Netherlands, Luxemburg, and Belgium drafted a convention which not only stressed the conviction that economic revival was impossible except through concerted international action, but which contained the specific clause that the signatory powers impose no fresh duties in their reciprocal relations and to proceed, by means of an annual reduction of 10 per cent, ultimately to reach 50 per cent, to lower the existing duties. It went even so far as to say specifically that the signatories would reduce existing duties annually by 10 per cent and up to 50 per cent to a contemplated level of 8 per cent ad valorem on manufactured goods, and 4 per cent on semimanufactured ones. The draft provided also that the convention could be joined by any other state willing to subscribe to the principles contained therein.¹⁰ Here was the great spirit of the proper liberating action manifest in two of Europe's outstanding democracies, expressed a few years before they went down fighting under the terror of the Stuka dive bombers awaiting military help from the United States. Here a great king spoke for the people of Europe—a king whose son would soon spend years as a prisoner of war, and a queen who has to share exile a few years later, with the statesman who had given that excellent advice.

World affairs took a turn for the worse at a third momentous conference, held also in July, in Ottawa—the Economic Conference of the British Empire. In contrast to all the other conferences which had merely appointed committees to make further studies or vague recommendations, Ottawa yielded tangible results in the form of 12 reciprocal tariff agreements among the participants. By imposing tariffs on many of the important agricultural export items such as wheat, corn, butter, cheese, and eggs, excluding meat, and by lowering or eliminating them for the dominions and colonies, the United Kingdom strengthened the flow of trade within the Empire and curtailed outside trade. Instead of strengthening world trade, the Ottawa agreements further undermined its foundations.

Economic disaster proceeded unabated while another conference

¹⁰ International Institute of Agriculture, *The Agricultural Situation in 1932-33* (Rome, 1934), pp. 110-11.

of general international attendance was attempting to map out international action. In September, 1932, the members of the League of Nations attempted to discuss the economic restoration of central and eastern European countries, but in view of the desolate state of affairs in all countries, dealt instead with economic and agricultural problems in general. It recommended measures for the revival of foreign trade, the revalorization of depressed commodities, cereals in particular.

More meetings in Geneva, and conferences in Rome and Bucharest in 1933 struggled with various approaches to the same problems without success. The World Monetary and Economic Conference was held in June and July, 1933, under the auspices of the League of Nations in London. The world's leading champion of freer world trade, Secretary of State Cordell Hull, headed the American delegation. This conference seemed to be a great milestone where, in the midst of the wreckage left by the depression, the governments of 64 nations, under the leadership of the United States, would sign a convention to stabilize currency relations, to lower import duties, and to improve international trade generally. Everything seemed to move in the right direction until, with the force of a bomb, the news struck that the United States refused to make any commitments on the currency issue.

This last great effort of international co-operation for the restoration of the world's business also marked the end of the era of the League of Nations. The League had failed to act when Japan invaded Manchuria in 1931, that great crisis which proved to be the crucial test of its right to exist. In that instance, Germany had proffered her good offices to the Chinese government and pleaded her case before the League. She had failed completely to obtain any support for collective action; absent among the supporters was the world's greatest military and economic power, the United States of America. Not yet had the great powers learned that irrespective of their people's desires, their very existence is mutually dependent upon co-operation and good will. Eleven years after the failure of the London Conference to establish a more livable world through international action, Cordell Hull, the Secretary of State who represented the United States at that Conference, and who by no fault of his had seen it stranded, stated in an address on American foreign policy: ¹¹ "The free nations

¹¹ *San Francisco Chronicle*, April 10, 1944, p. 11.

have been brought to the very brink of destruction by allowing themselves to be separated and divided. If any lesson has ever been hammered home with blood and suffering, that one has been. And the lesson is not yet ended." It was stated earlier that in November, 1918, the nations had not matured their thought on the necessities of peaceful cohabitation with others sufficiently to arrive at appropriate action. By 1931 they did not prove that they had advanced much further. In fact, it seemed that they had slipped even further back.

Functional Behavior of Agriculture in the Crisis

After this excursion into the history of futility with respect to international action for recovery, we return to the course of events from 1932 on. When the depression hit bottom, one phenomenon was most significant. The world's agricultural production was still at the peak level of previous prosperity. Total industrial production was, at the same time, down to 71 per cent of 1928 production, and in many specific fields down to 50-40 per cent or less of the production for that year. The greatest shrinkage in industrial production took place in raw materials for heavy construction. Due to the cessation of long-term investment the demand had fallen off. The basic disparity between the output of agriculture on the one hand and the output of industries, the transportation of goods and the commercial turnover on the other, found its natural expression in the loss of purchasing power of agricultural commodities as against industrial goods and services. Whereas the volume of industrial output corresponds roughly to the total wage disbursement, and whereas urgent flow production forcefully moves agricultural products into the market, it is self-evident that the prices for food, feed, and fibers must ultimately fall enough to re-establish the depressed urban purchasing power to the point where full absorption of output is possible. Although there are very intricate subsidiary influences operative on both ends of the market mitigating the operation of the crude quantum equation just mentioned, the statement is by and large correct. In the United States the agricultural gross income from marketing of farm products fell from 10.5 billion dollars in 1929 to 4.3 billion dollars in 1932. In Germany gross farm income fell from 10.2 billion marks in 1928-29 to 6.5 billion marks in 1932-33, while industrial pay-

rolls fell from 44.5 billion marks in 1928 to 25.7 billion marks in 1932.

The first remarkable social effect of this agricultural and price collapse was felt in the stability of food consumption. Total national consumption of food declined only to the extent that less food was imported in some countries and not compensated for by additional domestic production. Otherwise during the depths of depression the people consumed as much or even more food than they ate at the peak of prosperity. In Great Britain the population increased its butter consumption in 1930-32 from 18.5 to 23.5 pounds per capita, because the price of butter, wholly imported, fell far enough to make that possible. In Germany more hogs were produced at the bottom of the depression than ever before because the hog cycle happened to beat its peak. Consequently the German people ate more meat in 1931 and 1932 than in the prosperous years 1927 and 1928, although the maldistributed income was responsible for considerable dislocation of consumption. A similar situation prevailed everywhere. It is even doubtful whether this maintenance of food consumption for whole nations was the result of underconsumption by the unemployed and relative overconsumption by those still working. The unemployed probably used their low purchasing power essentially on food and rent, curtailing all other expenditures.

The financial upheaval in agriculture and all the hardship it caused helped significantly to mitigate the suffering of the masses of unemployed in the cities by continuing to provide an even flow of food at prices commensurate with the ability of consumers to pay.

During the depression certain important relations were discovered between the organization of farms and their ability to withstand the deflationary squeeze of the depression. Farms were the more susceptible to insolvency under general price decline the greater the proportion of their produce sold in the market, and the more their expense accounts consisted of cash items. Farms operating with family labor alone and using most of their produce for subsistence are much more resistant to depression. The weakest spot in all farms which directly exposes them to the danger of bankruptcy and agricultural depression is mortgage debts. Usually the degree of mortgage indebtedness corresponds to the extent of dependence upon the market. The depression most seriously affected those farm structures in which farming had been built up mostly by buying almost all necessities and selling all the produce. Countries with a majority of peasant farms

that sell only 10-20 per cent of their output felt the depression keenly, but still there was not the complete collapse that countries where the major part of farm products went into the market experienced.

America's Farms in the Depression

In no country is agriculture more completely linked with the market economy than the United States. It was expected, therefore, that the depression would lead to violent disturbances in the most highly developed sections of the country. Late in 1932 prices of basic farm commodities such as corn and wheat fell so low that when shipped some distance the freight consumed the price attainable at receiving stations. By November hogs brought at the farm in Iowa \$3.00 per 100 pounds, beef cattle \$5.00, corn 10¢ a bushel, oats 7¢, and butterfat 20¢ a pound. Since prices of all farm products in 1932 were down one-third to one-half the average prices of 1922-29, while interest on mortgage debts fell 10 per cent and taxes 20 per cent, tens of thousands of farms had to be foreclosed. In 1931 and 1932 more farms were sold under the hammer than during the two preceding decades. During the fiscal year 1932-33 the tax fiscus foreclosed and brought to auction 15.3 per 1,000 farms of all farms in the United States. Interest and taxes absorbed in 1930-33 three times as great a proportion of the gross income of American agriculture as they did in 1909-14; in 1932 no less than 22.7 per cent. However, less than one-half of all farms were mortgaged. Therefore, in the case of many highly productive farms, the interest and tax burden swallowed 50 or more per cent of the gross income.

If a farmer bought a farm for \$20,000 cash in 1929 and sold it in 1932 for \$10,000 one might say that he had lost little, because the \$10,000 represented almost twice the 1929 purchasing power. If, however, he purchased the farm for \$10,000 down and a mortgage of \$10,000 and sold it for \$10,000 he lost all he owned. In fact, he did not need to sell it to lose it, because the mortgagee would not let a mortgage stand that covered 100 per cent of the security.

When the crest of the wave of foreclosures hit the country's best farming areas in the Middle West, revolts occurred at the auctions. Farmers threatened to hang the auctioneers and made bidding impossible. In short, the most conservative element in the country felt outraged by the wholesale application of the bankruptcy laws to com-

petent and incompetent farmers alike. Indeed, the ethics of the competitive profit-and-loss economy seemed to be wholly perverted. It was no longer a matter of eliminating the professionally unfit or less competent entrepreneurs, but it had become simply the crude operation of an automatism to reduce debts to a collapsed price level, yet with all the stigma attached to that procedure, and immeasurable hardship inflicted upon tens of thousands of industrious, honest competent men and their families.

Glancing for a moment at Germany, we can see the same violent reaction in that country in 1932. There, too, farmers revolted against mass foreclosure. Black flags and straight-forged scythes were the ominous insignia of the revolters.

NRA, AAA, and the "Wallace Revolution"

In the United States the election of President Roosevelt was decided largely by his stand on the issue of breaking the grip of the depression, and the farm vote counted heavily. The Roosevelt Administration launched a bold and vigorous program for national recovery on such scope that its effect on business was assured. Industrial recovery was the major aim, but an amazingly large share of all the efforts was devoted to agriculture, and correctly so, because full industrial and commercial recovery was impeded as long as agriculture could not be restored to its normal state.

The Agricultural Adjustment Administration (AAA) policy of the New Deal persisted from 1933 to 1940, when an all-out wartime production program supplanted it. Under the AAA, America's agriculture was reorganized in line with the necessities of an economy steered by continuous government intervention, if not planned economy. As a result farm prices, production market sales, carry-over, and farm income were all subject to centralized political guidance or control. The policy initiated by the Agricultural Adjustment Act of May, 1933, comprised various groups of measures designed to combat specific "maladjustments." At the same time, all of them were supplementary to each other as well as to the energetic efforts to revive a normal flow of business and employment. In order to arrest the avalanche of foreclosures, to make farm creditors solvent once more, and to stop a further decline in land values, the Treasury made 2.2 billion dollars available for refunding the farm mortgage debt, scaling

down debts and replenishing working capital. However, aside from debts, prices needed the most adjustment. Only if prices could be restored to a higher level could farmers resume service on their adjusted debts. In order to restore prices of basic farm products, many measures were simultaneously applied to assure the desired effect. The president made use of the power conferred upon him by special acts to depreciate the dollar down to 50 per cent of its gold parity by gradually lowering its value to a level 59 per cent of its former parity. From February 1, 1934, the value of the dollar was stabilized at that level. No other subject instigated more lively controversy among economists than did the depreciation of the dollar. Without touching upon the contested question of the effect of the measure at home and abroad, we can state that during the devaluation period the prices of the basic staple commodities quickly rose. Prices in gold for the same commodities in the world market continued to fall. That this foreign price decline was caused by the devaluation of the dollar is not denied by those who claim that the domestic price rise was caused exclusively or principally by the depreciation of the currency.

The other major price-supporting policies under the AAA included the planned curtailment of crop acreages on a historical quota basis and indemnities to be paid to farmers, marketing agreements and codes, and direct authoritative price regulations. In order to make these adjustments effective at the earliest date, the government did not hesitate to correct crop acreages and livestock production by a plow-under campaign and the destruction of 6.2 million pigs and 200,000 brood sows. Despite the adverse publicity this policy received, it was the logical emergency measure for making agricultural adjustment effective one year earlier than would have been the case without it.

As the years went by, the initial emergency action of farm relief as a part of the national recovery policy evolved into one of permanent agricultural planned economy. From the temporary goal of regulating commodity prices toward parity of the 1909-14 base period, Congress gradually shifted to the more lasting regulation and guarantee of income parity for agriculture, again according to the pre-World War I base. Twice the worst droughts ever experienced in American history visited the country, one in 1934 and another in 1936, reducing crops and livestock herds far below the goals of planned adjustment. This

gave much greater impetus to Secretary of Agriculture Henry A. Wallace's policy of stabilizing the markets of agricultural commodities under the so-called "ever-normal granary"—large publicly held stocks to avoid excessive shortage, and hence excessive price fluctuations. Experiments with a publicly subsidized crop insurance system were undertaken to give the farmer more security.

Domestic markets were gradually brought under control through the activity of the AAA, whose great bureaucracy, with offices in 3,200 counties, became more and more competent with experience. However, this policy was carried out with relatively little absolute compulsion, although it could not fail to change the foundations of the agricultural economy. AAA planning operated through persuasion, financial inducements to co-operators, in many instances direct penalties for non-co-operation, and technically through voluntary contracts between the federal government and individual farmers.

As industrial recovery slowly got under way, market conditions improved. Yet the government had to supplement the farmers' annual income with gradually increasing sums, which soon exceeded \$1,000,000,000 a year—or more than 10 per cent of the gross cash income.

The weakest segment of the entire adjustment policy concerned the export market. Secretary Hull's reciprocal trade treaty policy made extremely slow headway. Planned economy in Europe and clearing agreements made a broad revival of foreign trade in agricultural products most difficult. While Secretary Wallace insistently pointed out that America could export farm products in large quantity only if it were willing to receive payment in the form of industrial goods, most farmers and their representatives in Congress put more and more faith in a remunerative, publicly manipulated and protected domestic market than in competition with other nations in the world market. Thus farmers refrained from voting to break down industrial tariff walls, and concentrated on closing the final gaps in agricultural protection and improvement in parity income.

Gross farm income in billion dollars, including the cash income from farm marketing, government payments, value of products consumed on farms where produced, and the computed rent of farm dwellings, moved as follows:

1932	1933	1934	1935	1936	1937	1938	1939
6.4	7.0	8.5	9.6	10.6	11.3	10.1	10.6

Agricultural exports showed the following development in billion dollars for the same years:

1932	1933	1934	1935	1936	1937	1938	1939
1.4	2.0	2.1	2.4	2.8	3.4	2.9	3.7

Net farm income was gradually restored, despite the loss of a considerable part of the former export market. The earnings from marketing of products were continually supplemented by gradually increasing amounts of public subsidies, paid in various forms as premiums for compliance with certain adjustment or amelioration programs. The "ever-normal granary" showed a definite tendency toward increasing stocks. During 1937-39 the remnant of the tremendous holding of farm land foreclosed during the depression was sold at good profit or without loss by the Federal Land Banks, insurance companies, and other farm mortgage investors. By 1939 the farm mortgage debt had declined to 7.1 billion dollars as compared with 9.7 billion dollars in 1929.

Cartelization of Agriculture in Great Britain

In Great Britain, agriculture never experienced the heights of prosperity or the depths of depression that were true of the United States. Great Britain's farm population represented a smaller proportion of the total population than any other country in the world. In 1931 only 6.7 of every 100 gainfully employed persons were engaged in agriculture, forestry, and fisheries, as compared with 22 in the United States.

Normally, British farming supplies only 20 per cent of the population's food requirements, but it is adjusted to supply the products bringing the highest premium. Animal products of special quality, and truck crops prevail. Animal products, such as fluid milk and cream, eggs, prime beef, mutton, and poultry meat have the advantage of utilizing the good grazing climate, proximity to markets, and proximity to the world market's cheap supplies of concentrate feeds. Feed being one of its chief cost items, animal production could not possibly

suffer as much in England as it did in the United States, because the major part of the feed is imported. The more that grain and oil-cake prices fell the more profitable it became to feed chickens, dairy cows, baby beef, and lamb, because the prices of animal products did not fall as much as did grain and oilseed prices. Other factors cushioned the impact of world agricultural depression on British farming. Despite a decided shift in the direction of increasing ownership, two-thirds of Britain's farms were still operated by tenants when the depression began. The elaborate and effective legislation regulating landlord-tenant relations established a smooth administrative machinery which protected the tenant against unjust treatment by the landlord. With year-to-year leases, rents had to be adjusted. The other more potent factor protecting British farmers, in the industrial field, was that Great Britain had succeeded in avoiding a cataclysm during the depression. The index of general business activity fell from 112 in 1929 to 96 in 1932, and rose to 101 in 1933,¹² but the number of people gainfully employed fell from 10.2 million in 1929 to only 9.3 million in 1932. There were more than twice as many people unemployed in 1932 as in 1929, but compared with conditions in the United States and Germany, Britain's industrial economy shrank much less.

Thus there was no need for farmers to riot or revolt. In the early thirties they nevertheless gained exceptional powers to regulate their markets. When free trade was abandoned, farmers were anxious to obtain their share of protection, but it was impossible to jeopardize the future of British industrial exports by cutting off food imports or by making food, one of the key raw materials of the export industries, so expensive that it could not compete. The British government did not intend, moreover, to embark upon a policy that would expand domestic agriculture in the direction of greater freedom from food imports. Exactly that situation would inevitably arise under high tariffs. A policy of agricultural autarchy would have been suicidal for the economy of the British Isles, for they could thrive only as an integral part of the British Commonwealth of Nations, and with a high rate of industrial exports. England's dominant interest at Ottawa was to stimulate demand for her industrial exports by offering a preferential right on the market of the mother country to the dominions and colonies.

In 1931 Great Britain adopted a farm policy dubbed in public the

¹² *The Economist* (Supplement), June 29, 1935, p. 45.

"Elliott Revolution." Mr. Elliott, the dynamic Minister of Agriculture and Fisheries, instituted under a series of agricultural marketing acts, an English equivalent of the American agricultural "New Deal." Underlying these reform laws and the administrative machinery they established was the idea that through lack of organization, outmoded marketing techniques, and poor co-ordination in the quality, packing, and timing of shipments, the English farmer always lost a part of his fair share of the consumer price. To remedy this situation, the legislators granted to producers of certain farm products the power of monopoly control over the market from the farm straight through to the retail trade. The marketing schemes for one commodity or for a group of commodities administered by registered producer boards under the Minister of Agriculture were typical examples of cartels.¹³ The boards could determine the quantity of the controlled product that could be sold by any producer. They could fix prices below, at, or above the ones at which a producer sold the product. They could not, however, fix prices at wholesale or retail.

Marketing schemes were put into effect between 1931 and 1933 for the major agricultural commodities. The milk scheme, merely a price cartel, is of particular importance. For the wheat growers a different device was invented to guarantee them a satisfactory return. The government guaranteed a fixed "standard price" to growers that sold wheat in the market at whatever prices they could obtain. The government paid a bonus to all growers at the end of the wheat year in the form of a "deficiency payment." The bonus was the difference between the average price offered by all farmers and the standard price. The funds required were secured by a processing tax on all flour milled in the United Kingdom as well as on imported flour. The tax burden was borne by the consumer. To limit the burden and to avoid excessive expansion of wheat production, the government fixed the maximum domestic wheat production that could participate in the bonus. This mode of paying subsidies to farmers with an automatic brake upon overexpansion of acreage and with its utmost administrative simplicity did not require the complex cartel machinery of the marketing schemes. Yet the cartels, too, proved advantageous when after 1937 peace rapidly expired and a new food blockade loomed.

¹³ Karl Brandt, "Recent Agrarian Policies in Germany, Great Britain, and the United States," *Social Research*, May 1936, pp. 176-187.

Total Cartelization in Germany

In Germany the character of agricultural policy during the thirties was vastly different. Economic crisis had struck that country more severely than anywhere else. Economic distress and prostration had given the radical nationalists the opportunity to seize power and to begin their national-socialist revolution. From March, 1933, on the nazis reshaped German agricultural policies, centered them around food autarchy and planned economy. They did not need to make changes in foreign trade. Barter trade, foreign exchange control, import monopolies, and clearing agreements had all been adopted and were simply extended. In dealing with the domestic market and with agricultural production, on the other hand, the new regime undertook the complete revision of all existing institutions. Instead of continuing with state intervention in the markets in order to establish better prices for some commodities, agricultural policy was redrafted according to exalted ideas about a centrally controlled food realm. After the experience with the decline in grain prices in 1928 and 1929, and with the impact of the industrial depression, farmers voted for Hitler—not because they believed in his racial ideology or in Herr Darré's mystic hocus-pocus about blood and soil, or in his lunatic projects for breeding a Nordic superrace on state-supported studs. Like most farmers in the world, they were hardheaded realists and ultraconservative people. In this case they simply felt that with prices jumping up and down as crazily as they did between 1919 and 1932, they could not hope to succeed in the business of farming, no matter how competent and efficient they might be. It was sweet music to their ears when they were promised stable prices, curtailment of dealers' margins, abolishment of speculative trade, stable wages, lower fertilizer prices, lower taxes and, on the whole, a fair margin of profit. Such a program had similar appeal in the United States, Switzerland, Holland—wherever it was proposed, in part or in whole. The nazi regime not only promised; it delivered on every single item. Despite their crusade against economic liberalism, and their contempt for the use of the profit motive as the driving power for economic accomplishment, the nazis never abolished the profit motive; rather they gradually learned how to use it as a force much more effective than the most brutal form of coercion.

Germany's highly organized agricultural economy was literally

taken apart and reassembled according to blueprints of the corporate state, after the elimination or reshaping of all existing institutions, organizations, societies, and administrative bodies. Elimination of any sort of competition, of difference of opinion, or of traditional existence of different groups pursuing side by side the same purposes, preceded the creation of the 100 per cent co-ordinated *Reichsnährstand*.

The *Reichsnährstand*, literally translated as the "Reich Food Estate," comprises the entire sector of the national economy that produces, handles, or distributes food. It is an all-embracing national cartel whose powers cover the relations of "man in agriculture," the farms as productive units as well as the entire market chain from wholesale buying through processing, shipping, storing, and retailing. A dual setup, a political organization which reaches from the top down to the last individual farm, farm laborer, food processor, or retailer, and an elaborate system of nation-wide vertical commodity cartels, constitutes the administrative machinery for the *économie dirigée* of the nazis.

The blueprint for the military organization is as rational and as close to perfection as imaginative diagrammatic planning can make it. This German version of the *estado corporativo*, which never made any headway in Italy but was rigged up with brutal logic by the nazis, operates throughout under the military principle of "leadership"—command from the top down, with absolute discipline and strictest confinement of competences. Prices are fixed from the farm through wholesale and retail markets with regional as well as seasonal differentiation. The speculative trade is gone. Dealers' margins are fixed. Yet on the farms private initiative is maintained to a certain extent. While there are national and regional production goals, farmers have considerable leeway in their production programs. Agricultural production is steered indirectly through price relations, supplemented by certain prohibitive ordinances. If more hogs are wanted, hog prices will be lifted in relation to feed prices and delivery quotas for grain relaxed. If fewer hogs are desired, hog prices will be lowered, grain delivery quotas raised, and, if need be, the feeding of certain grains forbidden.

Planning and central control have become increasingly competent and effective due to a highly skilled civil service, whose experience with state intervention has accrued since 1928, as well as to the fact

that the best talent has been absorbed into the compulsory commodity cartels from the trades.

As in the United States, full recovery in Germany was not accomplished alone by agricultural policy. The most powerful support for recovery of farm income came from the rising consumer income. As the industrial boom of rapid rearmament in 1937 and 1938 boosted the wage and salary income, and as employment soared to 130 and more per cent of 1928, it was natural that the demand for animal products should increase. By 1935 the index of livestock prices, which had fallen from 140 in 1929 to 62 in January, 1933, climbed to a level between 90 and 100 (1913 = 100). In 1936, German farm cash income rose from 66 to 91 per cent of the 1929 cash income. Farm indebtedness fell 6 per cent from 1932 to 1936. This was accomplished by reducing the prices of farm machinery and fertilizer, by reducing interest and taxes, by greatly lifting the price level of animal products, and by slightly lifting the crop prices.

Germany's dependence upon imports of food and raw materials needed for producing food was not decisively altered under the nazi regime. In 1936 roughly 81 per cent of all food calories were domestically produced and 19 per cent directly or indirectly (in the form of feed materials) imported.¹⁴

In 1932 about 75 per cent of the food calories were produced at home. There were many indications that agriculture would have a hard time keeping its production increases in line with the rise in population (about 400,000 per year), and with an increase in per capita consumption and with expanding employment in heavy industries.

Germany purchased increasing amounts of fats, feed, proteins and grains abroad in 1937, 1938, and 1939, largely to fill the granaries with war stock piles. If peace had not been deliberately terminated, Germany would have needed essentially 50 per cent of her fats supplies and 9 per cent of her feed protein from foreign countries.

In 1938 the total cartelization of agriculture under the *Reichsnährstand* law was extended to Austria, thus incorporating the annexed area into the same system of centralized planning and control.

¹⁴ Hans von der Decken, "Entwicklung der Selbstversorgung Deutschlands mit landwirtschaftlichen Erzeugnissen," *Deutsche Landwirtschaft, Sonderbeft 138* (Berlin, 1938) p. 123.

To increase production, prices for nitrogen fertilizer were lowered 32 per cent; prices for potash fertilizers 45 per cent. A moratorium and a debt adjustment program served to stabilize the financial situation.

By 1939, German agriculture was as fully prepared for war as was technically possible. In seven years, before the eyes and ears of the world, under careful analysis and continuous observation by foreign economic experts, a war food administration was assembled and tuned to such perfection that Herr Hitler could launch his war with the assurance that no repetition of the hit-and-miss performance of World War I would occur. His totalitarian administration of the food economy was surprise proof. Yet in Great Britain and the United States supposedly competent analysts pontificated for years preceding the war and during the first three war years that since Germany had been starved into submission in World War I, the nazi machine, too, must inevitably bog down under food shortages. Economic determinism, lack of balanced judgment, and a stiff dose of wishful thinking, aside from much statistical diletantism decorated with meticulous documentation, were mainly responsible for this costly blunder. In a later chapter, we will have occasion to find out what sort of fallacious reasoning and misinterpretation of facts led many professional observers astray.

Planned Farm Economy Elsewhere in Europe

During the years between the depth of the depression and the beginning of another world war, all countries felt the relaxation of the economic stringency. The end of deflation, less restrictive if not outright stimulating public policies, more industrial employment, greater demand for more expensive food, especially for raw materials, and rising prices, all eased the situation for the farmers in many countries. By no means all governments adopted such basic changes in the agricultural market as did the United States, Great Britain, and Germany. Some, however, went far in a similar direction.

Switzerland, Holland, and Denmark, three of Europe's and the world's agricultural-exporting leaders in efficiency and in the quality of their products, developed their own strategy for keeping their farmers in the saddle. Their predepression policies had differed considerably; Switzerland had pursued a course of high agricultural pro-

tectionism for its animal products ever since 1891; Holland and Denmark were both convinced free traders. All three were bulwarks of political freedom and democracy. Yet when in 1932 the world's economic sky seemed to collapse, all three accepted a strong portion of planned economy as at least a temporarily inevitable evil. They developed their own policies of "agricultural adjustment" without following American, British, or German precedents.

In 1928 the Swiss government began to grant a 10-million franc fund for the stabilization of milk prices to producers, and a guarantee of a uniform export cheese price for processors. When an increasing volume of foreign cheese purchases was lost, the government enforced a policy of reducing the manufacture of cheese, the imports of butter, cheese, oilseeds, vegetable fats, and feed materials by quotas beginning in 1932. Switzerland formerly exported butterfat in the form of cheese, and imported something like 10,000 tons of butter from Denmark every year, because it cost less than the exported butterfat in cheese. The adjustment of shifting milk from cheese manufacture to the churning of butter, and keeping foreign butter out, was a most logical one. Within four years the import deficit was closed. Many other government interventions followed, however. Soon a butter surplus appeared and began to threaten a decline in the price of milk. The government forced margarine and shortening industries to mix from 5 to 15 per cent butter with their products. The government, moreover, bought butter in the open market, rendered it to molten butter, stored it, and sold it below cost. All dairy farmers had been co-operatively organized for decades as a voluntary milk cartel under the Central Union of Swiss Milk Producers and the Swiss Cheese Union. Under the era of price fixing, adherence to these unions became compulsory. The cartel technique was used in the form of a deduction of one *rappen* (.01 franc) per quart of milk as a contribution to a price-equalization fund. Increased butter production led to increased hog feeding with the butter by-product, skim milk. To prevent a heavy price decline in the hog market, nonfarmers were forbidden to fatten pigs and pig imports were cut off. Finally a pig production quota was seriously discussed but did not materialize. In the meat-cattle market the government purchased price-depressing surplus supplies, converted them to canned meat, and disposed of it at or below cost. The calf market was stabilized. Grain production was not only heavily subsidized by a guaranteed price which had

been twice or three times as high as the world market price, but by a paid bonus to farmers for all flour milled for their own domestic consumption as well.

As a result of these measures, Swiss agricultural production in general, but specifically that of grain, expanded in spite of the unfavorable climate and soil conditions. In 1931 the government paid 17,000,000 francs grain subvention; and in 1934 no less than 35,000,000 francs.

While Switzerland, one of the world's oldest and most highly industrialized countries, could afford such policies, Denmark had to cope with a different situation. Fully 80 per cent of her exports were agricultural products. When quantitative import restrictions and duties made it impossible to sell all the produce abroad regardless of the price asked, the country chose to adjust the output by a procedure which the farmers considered just, and which made intelligent use of the remarkably thorough and accurate condition of agricultural statistics and farm land valuation. Great Britain, the only foreign market for Danish bacon, was subjected to an import quota in 1932 which was cut down in three years from 150,000 to 62,000 pigs a week. The Danish government allocated to farmers their share in the British export quota according to a complex key based on social considerations, on the former volume of their pig business, on the volume of the milk business, and on the value of their land. Danish bacon was so much preferred by the English consumer that the more the import quota was reduced, the higher the price rose, so that Danish farmers had a fairly stable return from their export of bacon pigs. However, pigs had to be sold in the domestic market for only half as much as the exported ones.

To assist dairy farmers in their butter export, an excise tax was put on butter and all fats sold in the domestic market, and a slaughter tax on all cattle slaughtered to stabilize cattle prices. Tens of thousands of cows that normally would have been sold to German sausage factories were eliminated from the markets by public purchase and scrapped by reducing the carcasses to fertilizer. The most drastic departures in principle lay in the introduction of a sliding import duty on bread grain, a fixed price guaranteed to grain sellers, and a subsidy for farmers who bought their bread grain. In November, 1934, Denmark abandoned excise taxes on butter and fats and restored her dairy industry to the status of free competition. However,

in 1937 the excise tax on domestic butter consumption was revived and maintained until 1939 in order to insure a minimum farm price for butter. The pig-card scheme with separate prices for exported and for domestically sold pigs, adopted in 1932, was used to the outbreak of war. The same held for the fixing of minimum grain prices with the aid of import duties.¹⁵

Holland was as hesitant to abandon free trade as were the Danes. Under free trade, Dutch agriculture had been prosperous and extremely efficient. Yet efficiency in production, high quality, and low prices avail little when foreign trade is governed by bilateral clearing agreements and import quotas. Holland was an exporter of bacon, cheese, butter, eggs, and vegetables, and an importer of bread and feed grain as well as oilseeds. She chose a strategy of farm relief along the line of reducing supplies in the domestic market, imposing excise taxes on domestic consumption, and subsidizing domestic farm production as well as exports with the revenues. Adjustment consisted chiefly of keeping out foreign foodstuffs and replacing them with domestic ones. Being an important margarine consumer, Holland could replace margarine and its imported raw materials by domestic butter. By means of an extremely high excise tax on pure butter (25¢ U. S. money per pound), a lower tax on margarine and a still lower tax upon a mixture of butter and margarine, domestic butter consumption was increased and sufficient revenues obtained to distribute a substantial subsidy to all dairy farmers. But in view of a shrinking export market, dairy production had to be restricted. Holland's equivalent of the American AAA allotted to farmers a certain quota of cows they might keep and a specific quota of heifer calves they might rear beyond the weight of 170 kilos. Each licensed calf received a card. This unique system of passports for individual farm animals, certifying to their right to exist, illustrates better than any elaborate text how far into planned economy even the most democratic countries had moved.

In addition to a restriction of cows, heifers, and calves, the government purchased some 120,000 cows for special slaughter in 1933 and 1934 to lift market prices. To raise pig prices, half a million pigs that could not be exported were purchased and slaughtered for canning. An import duty, coupled with a high slaughter tax and a stabilization

¹⁵ International Institute of Agriculture, *The World Agricultural Situation in 1936-37 and 1937-38* (Rome, 1939), pp. 136-140.

fund fed by tax revenues, established high domestic prices. At the same time farmers received compulsory pig allotments documented in the form of metal ear clips issued to individual piglets. This elaborate production quota system apportioned the number of piglets to the eleven provinces, from the districts down to the last farmer.

A bread grain duty was not imposed. Instead, wheat was absorbed at a fixed price by a law compelling the flour miller to use foreign wheat only in combination with at least 20 per cent domestic wheat, a method adopted earlier in Germany proper. All vegetables and fruits, sugar beets and oilseeds were subjected to quotas as a means of guaranteeing certain price levels.

Thus the three quality-exporting countries adapted their agricultural policies to conditions created by such powerful importers as Great Britain, Germany, and the United States.

France and Italy also adopted policies directed toward greater self-sufficiency, shifting purchases into their colonial territories and keeping domestic farm production profitable. The same policy was pursued by Japan when it became necessary to establish a system of continuous market intervention and manipulation of rice prices. By October, 1933, the rice and millet import duties were considerably raised, quotas established for rice to be withheld from the markets, and the rice market put under public control at fixed maximum and minimum prices.¹⁶

The General Economic Situation during the Thirties

In spite of the great obstacles to a strong revival of foreign trade, agriculture overcame its depressed state and by 1939 reached a moderately prosperous condition everywhere. Although energetic farm relief policies had favored the recovery of the farmer's income and a decline in the weight of his debts and taxes, it was industrial employment and the general revival of business activity that exerted the much more powerful leverage. Without industrial recovery, many of the price-lifting measures in farm relief policies would only have increased the misery in the cities.

While it would be an exaggeration to say that during the thirties the disturbing influences of monetary factors in the world economy

¹⁶ International Institute of Agriculture, *The World Agricultural Situation in 1935-36* (Rome, 1937), pp. 263-275.

had been eliminated, it can nevertheless be said that their influence was much diminished. In 1936 the tripartite agreement between the United States, Great Britain, and France tied the French franc to the dollar and the pound sterling, which had been relatively stable since 1934. Belgium (having devalued her currency in 1935) the Netherlands, Switzerland, and Italy followed with similar alignments of their currencies with those of Great Britain and the United States. Latvia and Czechoslovakia devalued their gold currencies. The so-called "gold bloc" led by Germany consisted of only five additional countries—Albania, Bulgaria, Hungary, Lithuania, and Poland after 1936. By virtue of her unscrupulous currency manipulations centering around the use of frozen foreign deposits as a stimulant for exports, involving 13 varieties of blocked and otherwise earmarked sorts of marks, and by ruthless bilateral trade bargaining, Germany gained superiority in foreign trade with east-European, Danubian, and east-Mediterranean countries, especially Turkey.

In the rest of the world, foreign trade benefited from the relaxation of trade restrictions accomplished after the tripartite agreement of 1936 and the abandonment of currency devaluation as a means of trade warfare.

Beginning in 1934, world trade gradually gained in volume, but by 1937 and up to the outbreak of the new world war the pace of progress accelerated. Trade declined in value until 1934. In 1936 and 1937 a real industrial boom developed in the United States, topped by the release of additional purchasing power and by the immediate effect of measures such as the veterans' bonus bill and the undistributed profits tax. In 1937 Great Britain adopted a rearmament program, at a time when Germany was already well on the road to aggression. In the United States the Roosevelt Administration felt it necessary to combat the boom with deflationary measures, and a business recession late in 1937 and in 1938 resulted, to be overcome in the second half of 1938 when the world reached an economic output higher than at any time since 1929.

World trade in agricultural commodities never wholly regained its turnover of the years preceding 1933. Although world production of cereals (excluding USSR) increased from 406,000,000 metric tons for the average of 1926-30 to 428,000,000 for the average of 1937-38, world total net exports of wheat declined from 21.7 million metric tons (1927-28 to 1931-32 average) to 15.7 million metric tons (aver-

age 1933-34 to 1937-38). In 1938-39 they climbed to 16.7 million metric tons, which was still far below the five-year average preceding the depth of the depression.

From 1933 through 1936 exports of maize remained below the 1928-32 average, but in 1937 and 1938 slightly exceeded it. Total world net imports of beef never again reached the 1928-32 level, although the United Kingdom imported more in 1936, 1937, and 1938. Mutton and lamb exports that went almost entirely to the United Kingdom were kept at or slightly above the 1928-32 level, while the world net imports of bacon, ham, and salt fat pork fell in 1933, 1934, and 1935—steeply at first, and then more gradually, from 534,000 tons in 1928-32 to 383,000 tons in 1938. World trade in butter rose throughout the six years 1933-38 from 521,000 to 606,000 tons. Trade in cheese never reached its former level; neither did trade in sugar. Cotton exports exceeded the 1928-32 level in 1936 and 1937, wool exports exceeded that level in 1935, 1936, and 1938. Net exports in rubber in all years after 1933 were far above the 1928-32 level, and reached a peak 46 per cent higher in 1937. The index of the important international trade in oilseeds and vegetable oils showed a continuous rise from 155 (1909-13 = 100) for the 1929-31 average, to 158 for the 1935-37 average.

Thus the years between 1932 and 1939 were in reality years of readjustment rather than startling expansion. Recovery was accomplished to an amazing extent in the face of the increasing political tension. Full recovery was reached, however, only under the powerful stimulus of rearmament and preparation for the war which crept audibly and visibly upon a world that thoroughly feared and despised it—sentiments shared by people in the European Axis countries except, of course, the political gangsters who launched the conflict.

Evolution and Rise of Soviet Agriculture

Soviet Russia has been excluded for the most part from the data and discussion so far presented, for the good reason that the Soviet Union, from its inception, pursued a goal of self-sufficiency for her huge Eurasian continental block. Only occasionally did she appear as an agricultural exporter. Russia's agricultural system, moreover, was so completely and uniquely reorganized that she cannot be dealt with as a segment of the world's agriculture. Therefore, a brief re-

view of what happened to agriculture in the Soviet Union from 1917 to 1939 will be useful for our discussion of reconstruction after this war since it illustrates a kind of solution deserving careful study.

The Soviet Union wished to increase the productivity of manpower in agriculture, and at the same time to industrialize the country at maximum speed, having no substantial foreign capital at hand to employ and very limited foreign trade. From 1918 to 1939, over a period of 21 years, this gigantic project was carried out under a strictly planned and centrally controlled economy. The planning, however, passed through painful stages of trial and error, particularly with reference to agriculture. After only ten years of Soviet policy, a complete structural change in the basic institutions of agriculture was forced upon 25,000,000 farm families in the agricultural realm reaching between the Baltic and the Black seas, between Poland and the Bering Strait.

During the chaotic years of revolution from 1918 through 1920 agriculture decayed under a system in which all farm produce could be publicly expropriated. Furthermore the large estates, whose owners fled the country or were killed, disintegrated. The peasants destroyed most of the buildings and the equipment, grabbed the land, stole or killed the livestock. A land decree of November 7, 1917, had *de lege* socialized land, stating that "the landowner's right of property in land is hereby abolished without compensation for all time. The land shall not be bought, sold, leased, or otherwise allocated." The decree on land socialization of February 19, 1918, stated that the land policy of the Soviet Union consisted of the encouragement of a collective system of farming. Three different forms of collectivized farms were planned: the *toz*, a co-operative farm; the *artel*, an intermediary farm that involved consolidation of fields but divided returns according to the capital contributed and the quantity and type of work performed; and the *commune*, whose members pledged themselves to the complete collectivization of their individual property, to divide equally collective income and consumption.

Starvation raged in the cities and the state of farm production was desolate. In consequence, Lenin temporarily abandoned collectivization, and in 1921 introduced the New Economic Policy (NEP), which lasted until 1925. Due to disastrous drought and inadequate crop acreages in 1921, famine ravaged country and town: approximately 5,000,000 deaths were attributable to the effects of starvation.

The NEP granted farmers the right to sell their produce in the market at free prices. Production of food rose sharply, livestock herds increased, and technical equipment improved. The more efficient family farmers with managerial ability began to rent land and to expand their production.

The Soviet disapproved of the entrenchment of farming fostered by private initiative and competition and in 1927 abandoned the NEP. Once more collectivization became the rule; heavy restrictions upon renting land and selling produce in the market, and additional farm taxes in kind were imposed. This discouraged the 25,000,000 farmers, and passive resistance to the regulations ensued. In 1927 and 1928, agricultural output declined severely and food supplies in the cities were even more seriously affected. The Soviet government then, and for many years after, was represented almost exclusively by the industrial proletariat, while farmers had almost no influence, although they constituted the overwhelming majority of the population.

The first *Piatiletka*, or Five-Year Plan, adopted in December, 1927, and in force from 1928 to 1932, provided for the collectivization of agriculture and the establishment of a large sector of state-owned and state-operated sovkhoz farms of giant size. Up to 1930 collectivization proceeded slowly, with persuasion and inducements on a more or less voluntary basis. In 1930 and 1931 a violent policy of forcing farmers into the kolkhozi terminated the slow progress and brought about the desired structural change. Between 1930 and 1934 nearly 5,000,000 kulaks were stripped of their possessions and were "liquidated," thus quelling the political resistance of the efficient family farmers.

The success of the reorganization of agriculture on a collective basis was purchased, however, at a heavy price, as the result of insufficient foresight and a defective psychological approach on the part of the planning and executive organs of the government. While they were being squeezed out of their individual farmsteads into the collectives, and in deep resentment against having to surrender livestock, their chief mobile capital, farmers slaughtered, destroyed, or abandoned to starvation more than 50 per cent of the horses, 44 per cent of the cattle, 66 per cent of the sheep and goats, and 43 per cent of the hogs in the Soviet Union. The greatest disaster was the loss of horses and cattle, both because there were not enough tractors on hand to replace the lost horse draft power, and because the decline

in cattle herds meant a severe loss of beef, milk, and dairy products, making impossible the utilization of the huge amounts of cattle feed. Even in 1938 the cattle herd had not come back to its 1929 size, and sheep and goat herds were still a third short. Pigs alone increased—by 50 per cent.¹⁷ Despite this serious misfortune, the goal of collectivization was reached under the first Five-Year Plan. The new structure laid down in 1932 showed, in 1938, 243,700 kolkhozi, ranging in size from 250 acres to more than 2,500 acres comprising 19,000,000 former individual family farms.¹⁸ The second Five-Year Plan (1933–37) solved the chief problems of power and implement supplies, and attempted to increase crop acreages and yields per acre.

While tractors, combine harvester-threshers, and trucks originally had to be imported from the United States, Russia soon began to produce these essential machines for mechanized agriculture herself. The following tabulation (calculated in thousands) shows the rapid progress made in harnessing the collective farms with modern machinery:¹⁹

Type of Machinery	1933	1934	1935	1936	1937	1938	1938 in Per Cent of 1933
Tractors	211	276	360	423	454	483	229
Trucks	27	40	64	96	144	196	736
Combines	25	32	50	88	129	153	604

It took some time to train competent personnel, to organize the supplies of gasoline, lubricants, and spare parts as well as repairs, and to refine the whole new system to some degree of efficiency.

Aside from increasing the output of farm machinery in Russian factories, the second Five-Year Plan revised and improved the vital system of 6,385 government-owned and operated machine tractor stations (MTS) which gradually took over ownership and management, at legally fixed fees in kind, of the greater part of all complex machinery as well as the repair shops for the kolkhozi.

Toward the end of the second five years, two important political decisions affected the newly created system of collectivized and mechanized agriculture. The political purge of Trotskyites and other

¹⁷ Aron Yugow, *Russia's Economic Front for War and Peace: An Appraisal of the Three Five-Year Plans* (New York, 1942), p. 52.

¹⁸ Lazar Volin, "Effects of the Drought and the Purge on the Agriculture of the Soviet Union," *Foreign Agriculture*, III, No. 5, 188.

¹⁹ *The Economist*, April 22, 1939, p. 198.

opponents of the Stalin course led to the liquidation or displacement of administrative and technical personnel in the collective farm system from top to bottom, including Commissar of Agriculture Chernov.²⁰ In the campaign against alleged wreckers and saboteurs, many thousands of peasant families were ejected from the collective farms. Moreover, a move was made to improve the morale in the kolkhozi. A series of decrees over a number of years reformed the right of the kolkhoz as such to hold land, and extended the rights of the members to own, manage, and operate individual property. The land was declared the permanent inalienable property of the kolkhozi. Kolkhoz members were granted the right to own their houses, a garden, and a small strip of land, together with some livestock. This regression from a purely collective to a combined collective and semiprivate economy strengthened productive incentive immeasurably. Morale on the collective farms began to soar. State-owned and operated "grain factories" or large-scale sovkhoz estates were broken up and divided into units not exceeding 27,000 to 36,000 acres. Their productivity was improved, but they continued to operate at heavy financial loss. In 1938 they had only 8 per cent of the country's sown acreage, produced about 10 per cent of the total grain yield, but the costs of production were very high and only 12,000,000 hectares out of a legal holding of 68,000,000 hectares were cultivated.²¹

The third Five-Year Plan (1938-42), which was interrupted by the war, no longer dealt with the institutional problems of collective vs. private farming nor did it particularly stress mechanization. It was instead devoted to the fullest production of food and fibers, to create abundance for all the people. Up to 1939 the production of Soviet agriculture shows the following evolution of its gross output in millions of metric tons: ²²

Crop	1913	1934	1935	1936	1937	1938	1938 in Per Cent of 1913
All grains	80.1	89.4	90.1	82.7	120.3	95.0	119
Oilseeds	2.1	3.7	4.3	4.2	5.1	4.7	217
Sugar beets	10.9	11.4	16.2	16.8	21.9	16.7	153
Cotton	.7	1.2	1.7	2.4	2.6	2.7	363
Flax	.3	.5	.5	.6	.6	.5	165

²⁰ Volin, *op. cit.*, p. 187.

²¹ Yugow, *op. cit.*, pp. 56-62.

²² *The Economist*, April 22, 1939, p. 197.

In 1939 one-half the spring-sown area on all collective farms was sown by machine, indicating that the half-million tractors and all the other equipment was still spread very thin, and that much more progress could be made. The population had increased from 140,000,000 in 1913 (USSR territory) to 170,000,000 in 1939, but the average of the 1937 bumper crop and the 1938 normal crop made the per capita grain supply larger than in 1909-13. During the years before World War I, 10.6 million tons of grain from a 63.3 million ton crop were exported,²³ leaving 52.7 million tons for domestic use, or 376 kilograms per capita. For the 1937-38 average, the 1,700,000 ton crop was available for domestic use entirely, or 629 kilograms per capita. Relatively, this supply was even larger, because in 1938 there were 18,000,000 fewer horses than in 1913 and they had consumed roughly 10,000,000 tons of grain. Thus the per capita supply of all grains was in reality 688 kilograms in 1937-38, compared with 376 kilograms in 1909-13.

By 1939, the Soviet Union again had an agricultural system sufficiently consolidated to guarantee a steady production of food and agricultural raw materials. No longer did collective farming or mechanization constitute a political or economic problem. The collective farms, with a nucleus of private homes, gardens, and livestock, equipped with tractors, trucks, and combines, were a going concern, steered and controlled by centralized state planning.

Thus the Soviet government's food economy reached the same state of preparedness for war that the Nazi government attained. That Russia's agriculture relied so much on tractors and gasoline made it more dependent upon industrial production than upon draft animals for power. Although German agriculture did not rely so much on gasoline and tractors, it depended more upon supplies of fertilizer, electric current, and the industrial supply of its many implements.

²³ League of Nations, *Agricultural Production in Continental Europe during the 1914-18 War and the Reconstruction Period* (Geneva, 1943), p. 62.

CHAPTER IV

The Impact of the Present Total War upon the World's Food Economy, Agriculture, and the Rural Community

Consolidation of Europe's Food Resources by Conquest

AFTER seven years of rearmament, the absorption of Austria, and the partition of Czechoslovakia, Hitler felt that he was ready for his big adventure. He invaded Poland in September, 1939, four weeks later in the season than World War I had begun. Then the grain harvest was more certain to be in the bins in Germany as well as in Poland. The motorized blitz against the eastern neighbor was largely designed to strengthen Germany's position. When Austria was annexed in March, 1938, it added to Germany's food balance sheet a deficit of several hundred thousand tons of grain and several hundred thousand hogs a year. The absorption of Czechoslovakia into the nazi orbit in March, 1939, gave the Reich industrial resources and military assets. Agriculturally it meant merely a deficit of over 100,000 tons of vegetable fats and a surplus of some 300,000 tons of sugar and some lumber.

But Poland's position as the booty of aggression was different. As an agrarian exporting country with a great potential production capacity whose actual output of food had been held back by tight export markets, Poland promised to become a valuable economic asset. Overabundance of man and woman power, a great capacity for producing grain, potatoes, sugar beets, oilseeds, cabbage, hogs, butter, eggs, flax, and hemp, and a vast exploitable stand of timber made conquest very profitable. Several provinces, such as Pomorze and Posnan, had once been German territory, and were familiar ground to thousands of Polish-speaking German farm managers, thus making the seizure of the resources even more feasible. After a brief

but heroic stand of 46 days, the most valuable part of Poland fell under German administration—before the first three months of the war were over. Russia annexed the eastern provinces of Polish White Russia and the Polish Ukraine.

In March and April, 1940, Denmark and Norway were overrun. These two countries incorporated important food resources into the nazi war economy. It is wishful thinking to consider both countries, simply because they imported much grain and fats, as an obligation in the German food ledger. Denmark was one of the world's leading quality exporters of butter, eggs, and pork products, shipping the greater part of her exportable produce to England. Danish agriculture therefore brought a welcome windfall of food to the Reich, particularly as long as the large staple of livestock could be reduced. Beyond that initial phase, the well-equipped and competent farmers could adjust their production to less imported feed and to the special demands of the German market. Norway as well as Denmark were considered by the Germans to be an important source of fresh and salt fish. Moreover, with her grip on Norway, Germany controlled the world's greatest exporter of cod-liver oil, still one of the excellent concentrates of the antixerophthalmic vitamin A, and the antirachitic vitamin D.

May and June, 1940, saw the incorporation of all Holland, Belgium, Luxemburg, and the industrially most important part of northern France into the Reich's orbit. Belgium, Luxemburg and France were industrial and strategic gains. As for food balances, Belgium at least added a considerable deficit in grain, fats, dairy products, and meat. Holland, on the other hand, meant a definite gain in food resources, as had Denmark.

When Italy joined Germany as a belligerent ally, she did not assist in food supplies, but promised to ship citrus and other fruits as well as some winter vegetables to Germany in exchange for coal. In 1941 the basin of the lower Danube was incorporated into the *Grossraum* or Continental block economy, partly by treaties, as in the case of Hungary, Bulgaria, and Rumania, partly by military conquest, as in the case of Yugoslavia. These countries comprise a group that exports food, particularly cereals and meat, but also exports a sizable volume of oilseeds, fresh and dried fruits, vegetables, and eggs. This group also exports much tobacco. Greece, which after conquest was also merged into the Continental block, is a wheat, meat, and sugar

importer, but normally exports olives and olive oil, raisins, figs, dried currants, and tobacco.

The four Danubian countries combined had for the average of 1937 and 1938 an annual net export of 3.6 million tons of cereals, 400,000 tons of animal products, 175,000 tons of oilseeds, and 114,000 tons of fruits. Greece imported for the same period 584,000 tons net of wheat and 330,000 tons net of meat, but also exported net 29,000 tons of oil and 128,000 tons of fruits.¹ The four Danubian countries plus Greece therefore added to the nazi war food economy a normal net supply of 3,000,000 tons of cereals, 242,000 tons of fruits, 204,000 tons of oilseeds or their equivalent in oil, and 70,000 tons of animal products.

The difficulties of intra-Continental transportation require some deduction from such exportable surpluses of prewar years in an estimation of the value of conquered countries for the fortress economy, particularly as the war's strain bears down more on the railroads. Yet, it would be a mistake to exaggerate the deductions on that account.

By April, 1941, only 20 months after the invasion of Poland, the European Axis controlled practically the entire Continent up to the new boundaries of the Soviet Union which, after the annexation of Estonia, Latvia, Lithuania, eastern Poland, and Bessarabia, ran almost in a straight line from Memel to the western part of the Black Sea. The Axis territory included Norway and Finland. It was contiguous to Spain and to Turkey, both of which traded, as they still do in 1944, some food and many important industrial raw materials with Germany. Coastal shipping all around the Continent was under Axis control except for the coasts around the Iberian Peninsula which lay under the shadow of Gibraltar. From the summer of 1941 to November, 1943, Axis territory was expanded far to the east. After the attack upon Soviet Russia on June 22, 1941, the eastern boundary was rolled back to Leningrad and partly beyond, close to Moscow, and from there south, swinging much farther east to the Volga and deep into the Kuban area, almost to the Caspian Sea.

This steam-roller campaign of mechanized armies over the vast expanse of Russian plains yielded the three Baltic states, exporters of livestock products; eastern Poland, a grain, potato, flax, and pork producing area; Bessarabia and the Ukraine, with a normal surplus

¹ All data from League of Nations, *International Trade Statistics*, 1938 (Geneva, 1939).

of grain, sugar, oilseeds; and finally the lower Volga and northern Caucasus districts' grain, oilseeds, and meat.

From the beginning of the war, the German war food administration took it for granted that the European Continent would be cut off from other continents by blockade, and that the food requirements could be covered only by drawing upon Continental resources. Occasionally a few blockade runners came through with food. A daring surface raider in 1940 brought from the Antarctic a whole Norwegian whaling expedition, the floating factory's tanks bulging with whale oil. Such dribbles in their sum total, however, never reached a significant figure.

The Blockade Resistance of the Fortress Food Economy

The nazi administration has managed the food economy of the Continental fortress by devices that are a part of the ordinary machinery of a planned and regimented economy. Large stock piles of all essential commodities accumulated before the war have been carried over in order to meet temporary emergencies and shortages. Production in Germany as well as in all the occupied territory is directed according to national production goals, is stimulated by generally profitable prices, its progress is constantly surveyed down to the last farm. The goals are fixed annually, and determine whatever changes in acreage of specific crops are to be made and how large the herds of livestock and the output of animal products shall be. The delivery of all products from the farm to the proper agencies in the market is subject to public control as to time, volume, and destination of delivery. On the demand side of the market a similar system of public planning and controls operates. After ample reserves are set aside, the available annual output of all foodstuffs is allocated to major groups of claimants according to necessities of warfare and priority rank. While the armed forces claim their allotment of food on the basis of established army diets, the requirements of all civilians are tailored to fit available residual supplies. Civilian consumption is either strictly rationed, or, where this is not feasible, consumption is restricted by curtailment of available supplies. The same principle of public control of demand applies to the utilization of food or feed products and to fertilizer as well.

In other words, not only the people, but all the animals and even

plants are put on rations. Any sort of utilization of agricultural produce is subject to central controls. In principle this system is airtight. It almost eliminates the element of surprise and uncertainty in consumption, demand, and utilization, while it still must cope with the fluctuation of yields and crops due to weather and with many other biological factors beyond human influence.

In comparison with the strategy used in the American war food administration, the German administration has made maximum use of the price incentive by fixing such differentials that production goals are enforced.

In August, 1944, at the end of five years of world conflagration, all the available evidence convinces the author that the thesis he held and made public from the outset of the war is still valid, and probably will remain so: the Axis cannot be defeated by food shortage, but must be defeated on the field of battle.²

This considered opinion, formed on the basis of years of economic analysis and observation, in no way implies that populations everywhere in Europe or even a majority of the people could maintain anything like their habitual peacetime diet, or that agricultural production could be protected against the effects of total war and could continue to produce as in prewar years. What has happened in more than four years of war behind the blockade cannot be condensed into any simple formula. It requires the careful consideration of the many multiple facets of the food situation. While a great amount of information is at hand on many details, nowhere has an attempt been made to compose a more general picture of the European food economy during the war, sufficiently concise and accurate yet free from detail that would swell it to encyclopedic form. Following is an attempt to fill this gap at least tentatively. It is confined by the requirements of our subject, the reconstruction of world agriculture.

As soon as Germany had accomplished the first part of her bid for Continental empire by military conquest, she began to consolidate the accumulated resources, to reorganize their utilization, and to mold them into an integrated system of planning and regimentation.

² Karl Brandt, "Germany Behind the Blockade," *Foreign Affairs*, April 1940; *idem*, "Food as Political Instrument in Europe," *Foreign Affairs*, April 1941; *idem*, "How Europe is Fighting Famine," *Foreign Affairs*, July 1941; "Hunger Won't Beat the Axis," *Saturday Evening Post*, May 9, 1942; *idem*, "We Can't Starve Them Out," *Saturday Evening Post*, July 29, 1944; *idem*.

Indeed, the nazis did not wait for the completion of conquest, but began to set the wheels of reorganization in motion a few days or weeks after the armies had swept through. It was reliably reported that three days after the Germans had begun to occupy the Sudeten area, German soldiers in uniform were seen plowing the fields. In Poland, the farm-management personnel of the army's *Wirtschafts-Stäbe* followed immediately behind the combat forces and began to direct farming operations. There is much evidence that the same pressure to re-establish farming to full activity was exerted in all occupied areas. The methods used differed from country to country. Moreover, each country was assigned a particular place and task within the food economy of the Continental fortress.

The Divisions of the Continental Food Economy

There is no scheme of the nazi blueprint at hand, but the major outlines of the plan for the organization and the performance of European agriculture can be drawn. A welter of articles in European newspapers and magazines especially from neutral countries, reports by high nazi officials, and orders and ordinances provide the evidence. Since they had to face the possibility that the conquest might be disputed at any time, either by invasion and air bombardment from without, or by mass revolt and sabotage from within, the nazis conceived their Continental food economy as a system of concentric rings, corresponding to successive rings of military lines of defense.

Agriculturally these rings proceed from the outermost zones, which may or may not yield some supplies beyond those needed solely for their populations, to zones of increasing importance for the import requirements of the Reich, with the Reich itself forming the center. Naturally these areas are not evaluated exclusively as sources of agricultural products. Their economic rank is decided by the aggregate of all materials and services to be derived from them, as well as by their military importance. Considerations of food requirements for the conquered people are subordinated to those of securing the essential war supplies for the nazi machine.

Thus the inner ring of the fortress consists of the Reich of 1937, Denmark, Holland, Belgium, the French *départements* east of the Maginot Line, including Alsace-Lorraine, Austria, Czechoslovakia,

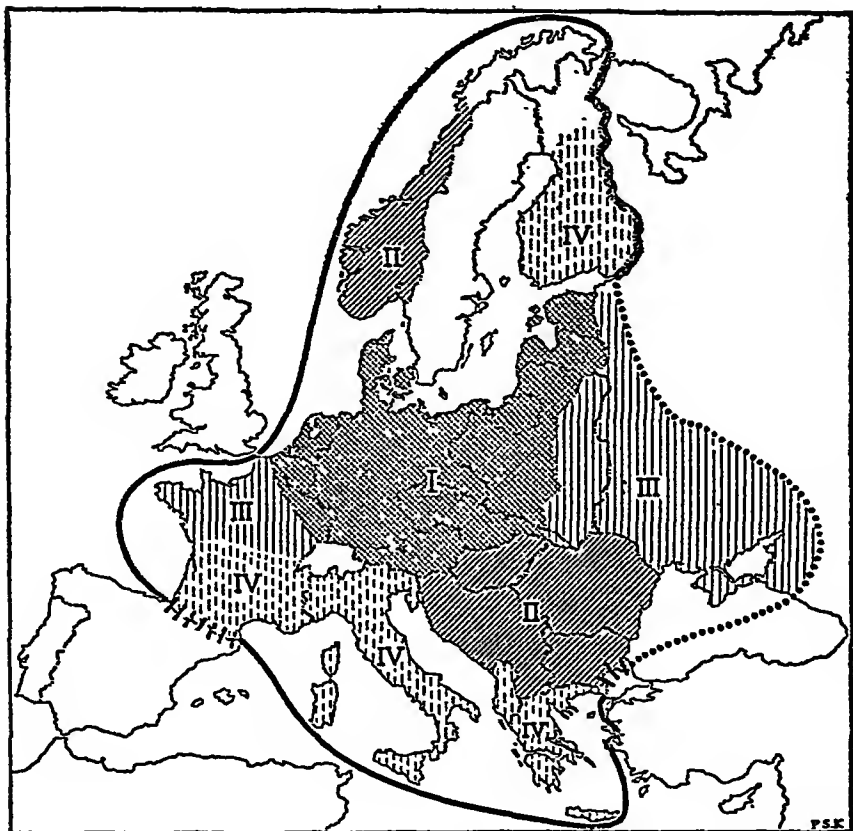
Poland except for Polish western Ukraine and Polish western White Russia, Lithuania, Latvia, and Estonia.

This central pivot embraces a great range of agricultural conditions. It has a decided slope from west to east in productivity of soil and the skill of men on farms, but it has also a concurrent slope from densely settled and highly industrialized areas in the northwestern corner and the west in general, toward more rural and sparsely populated regions in the east. Therefore the eastern belt from Estonia down to Moravia counts heavily as a food surplus producing area, especially for animal products, although the Corridor and Posnan can also export sizable quantities of potatoes and rye. Austria's and Czechoslovakia's industrial resources, located—at least for several years—well out of heavy bomber range, are of such importance to Germany's war potential that they are considered vital parts of the Reich. If they need food, they will get it, just as any German province would; and if their normally good capacity to produce food can be expanded, they will receive the means with which to expand it.

Belgium and the adjacent corner of France are in the same class. The Brie-Longwy coal basin and the heavy industries in it are an extension of the Ruhr and the Saar districts. For that reason their food deficits will be covered by the German food administration. At the same time, every effort is being made to step up and adjust to war needs the local production of food, particularly since the climate and soil are good, farmers very efficient, and local produce can find its market without involving a great deal of transportation.

Denmark and Holland are the two most productive food provinces Germany has. They rank equally high or higher with the lower Rhineland because of their unequaled efficiency and their professional versatility in agricultural production. It is very deceptive to measure the agricultural plant of these two nations simply on the basis of cultivated acreage, livestock numbers, or similar statistical data; and it is similarly misleading to focus mainly on the peacetime dependence of these countries on overseas imports of grains and oilseeds. The German General Staff's *Wehrwirtschaft* section knows better. It is aware that the average Dutch or Danish cow yields in marketable dairy products at least twice as much as the average cow in Poland, and that therefore the 6,000,000 Dutch and Danish cattle yield for the market far more milk of an incomparably better grade than Poland's 10,000,000 cattle.

CHART V

RELATIVE IMPORTANCE OF THE RINGS OF SUPPLY IN THE FORTESS
FOOD ECONOMY

The war food economy in this central ring, marked "I" on the map (p. 121), is so managed that it is much better controlled than all the other rings. In greater Germany, i. e., the old Reich plus Alsace-Lorraine, Austria, Sudetenland, and the annexed northern part of Poland, the so-called "*Warthegau*," Danzig, and Memelland, agriculture is incorporated in the *Reichsnährstand* and its production and marketing are ruled by commodity cartels. The system of food planning, made foolproof before the war, was simply extended to the

annexed areas, and experienced administrators transferred to them. It soon began to perform as well as it had earlier although in many areas it did not succeed in keeping production up to prewar levels.

Denmark, Holland, and Belgium were left more or less to self-government in agricultural affairs with advice or instructions issued only from the top. In Denmark and Holland the most competent administrations, the farmers' co-operatives, were not only in a position to perform any agricultural planning job much more skillfully than any German occupation authority, but they were keenly interested in doing so, because co-operation promised to be the far lesser evil. Belgium, on the other hand, was a net importer and was consequently less experienced in agricultural planning, so a new war food administration had to be organized. In 1940 the Ministry of Agriculture, and the Ministry of Food Supplies founded in September, 1939, were merged. In October, 1940, this new ministry formed a national food cartel on the model of their *Reichsnährstand*. Like its German forerunner, this cartel, the *Corporation nationale de l'agriculture et de l'alimentation*, is all-embracing, and comprises producers, distributors, and processors.³ The ministry and the corporation throughout the war have been responsible for production planning, delivery controls, rationing, and planning of exports and imports. Needless to say, the final decision about how much food can be moved into Belgium, how much can be squeezed out of it, rests with the German command.

In the area east of the Maginot Line running from the Channel to the Swiss border, a different system of managing the food economy was established. It is essentially the one applied in the east. The German administration, in view of the absence of any workable part of a national agricultural or food administration for the thousands of abandoned farms, whose occupants either fled or were evacuated, and faced with the Frenchman's suspicion and animosity toward governmental interference in any way whatsoever, put all the vacant land under the management of its eastern farm management corporation, the Ostland G. m. b. H., a corporation under the jurisdiction of the *Reichsnährstand* ⁴ in autumn 1940.

³ *Neue Zürcher Zeitung*, October 20, 1940, No. 1516; *ibid.*, December 16, 1940, No. 1860.

⁴ Articles by Josef Winschuh, *Deutsche Allgemeine Zeitung*, July 19, 1941, No. 345/346, and July 23, 1941, No. 352/353.

This organization put 2.6 million hectares of land under cultivation, using French prisoners of war for labor and large-scale mechanized farming methods. Merging of fields, plowing down old property lines and consolidating the land for tractors and steam plows was to the German managers simply the difference between allowing land to lie idle or using it for producing food. What it did to the French villages and the people who had lived on the good inherited earth was of no concern to the nazis. The German food administration was satisfied if even between the forts and on top of the Maginot Line food was grown once more.

In the eastern part of the central ring, agriculture had to be similarly managed, but it did not present insurmountable obstacles there, either. The "Corridor" and the province of Posen, which had been German up to 1919, were annexed and integrated into the German agricultural fabric. The rest of Poland was organized as the territory under the "Government General" seated in Cracow. All farms over 50 hectares, 3,900 of them, were taken over by a farm-management office which established a centralized direction and control. All farms under 50 hectares, the Polish peasant farms, were under the authority of chambers of agriculture, with a German commissioner in charge, but otherwise manned by Polish personnel.⁵ The marketing of all products was organized on the German cartel system. A central agricultural office became responsible for supplying all the farmers' needs and the delivery and sale of all farm produce. The existing system of agricultural co-operative associations was much expanded. In the Baltic states a similar system was applied, leaving the production in the hands of the family farmers, but controlling their supplies and sales, as well as planning production from central offices under German management.

One major gap in the central ring remained. Many large-scale farms were left without owners, occupants, or managers. They comprised either large estates, whose owners had been killed, interned, or had fled, or groups of farmer-peasant holdings consolidated by the Soviet government as collective farms. Most of these large-scale farm units were turned over to the Ostland corporation, mentioned in connec-

⁵ "Wirtschaftliche Reorganisation im Generalgouvernement," *Neue Zürcher Zeitung*, December 9, 1941.

tion with the French belt east of the Maginot Line. This corporation operated no less than 5,000,000 hectares of tillable land in 1941.

The Outer Rings of the Fortress Economy

The second ring of food resource territory is made up of two areas which compose the greatest contrasts found on the Continent: first, the four Danubian countries, Bulgaria, Hungary, Rumania, and Yugoslavia; second, Norway. Norway is an excellent source of sea fish, particularly of salt herring, of cod-liver oil in vast bulk, of sizable exports of nitrogenous fertilizer, of exports of aluminum, of many essential minerals and ores, and of wood pulp. The Danubian countries occupy so important a place in the nazi food plans because they are traditionally Europe's greatest exporters of grain, and potentially a fruitful source of oilseeds. Danubian exports of animal products, fruits, and tobacco, are likewise significant.

Norway's fisheries operate under German control on boats and ashore, but Norwegians, and not Germans, manage and run the business. In the Danubian block, German administration finds itself thwarted at every turn. Hungary and Bulgaria manage to retain a considerable degree of independence, so that whatever food supplies are shipped to Germany leave those two countries as exports on clearing account and in exchange for industrial goods. Rumania and Yugoslavia, torn by domestic strife, suffering from German military occupation, are much more subject to overt German pressure and interference. No matter how disappointing the supplies derived from the lower Danube may have been to Germany, that area is still on a par in importance with the rim of the first ring.

The third ring contains the formerly German-occupied northern part of France, parts of Soviet Russia east of the Baltic, the Polish partition line of Lord Curzon and the territory east of Bessarabia. This ring is an area which may not even feed its occupying forces, but still may yield certain moderate supplies. The population of Ring III does by no means rank as high as that of Rings II or I. It may be allowed very low rations for the sake of draining off exports from it. The actual as well as the potential food production capacity of the German-occupied Soviet area has been more of an enigma to the German ad-

ministration than any other agricultural problem on the Continent.

Northern France, including Paris, is of essentially military importance as the base of air-force activities against England, and as an anti-invasion base for ground forces. It also harbors some important armaments industries. Agriculturally, this area is a nuisance despite the fact that it is the part of France which has a high food output per capita or normally yields surpluses. It does not pay to organize it effectively, although some food is taken for the German forces. Occasionally some food imports are needed. The worst black market in all Europe operates here.

The agricultural aspects of occupied Russia are just as perplexing to the nazis as the Soviet Union has been as a military power. The Ukraine, the proverbial bread basket, with its rich prairie soil, has had its magic lure for the conqueror. When the south Russian Front was rolled back deep into the Kuban district in 1942, the nazi press began to report the alleged wastefulness, inefficiency, and low yields of Russian collective farming. There were hints about the great opportunity to increase yields under German farm reorganization, but a cautious tone prevailed as to the time required to improve conditions to the point where worthwhile export surpluses could be created. There were grandiose speculations, however, about the restoration of the Ukraine to its position as the supply center of a major part of the Continent's grain requirements—all, of course, under the tacit assumption that Germany would be able to keep her hands on the Ukraine indefinitely.

The administrative devices applied to the eastern part of Ring III were modeled after the German agricultural cartel and blended with the experiences gained from the economic administration of occupied territories in World War I. Two high commissioners were assigned supreme authority over the area between the Baltic and the Black seas, one being responsible for the Ukraine (*Reichskommissar für die Ukraine*), the other for the Ostland—all the eastern occupied territory except the Ukraine, the area of the "Government General," the annexed provinces, and the area between the Bug and the Dniester rivers.⁶ The latter territory was designated *Transnistria* and subordinated to Rumania's administration.⁷

⁶ *Südost-Echo* (Vienna), October 2, 1942; *Frankfurter Zeitung*, March 5, 1943.

⁷ *Frankfurter Zeitung*, February 16, 1942.

In January, 1942, a general ordinance concerning the organization of land tenure in all the occupied eastern territories abolished the "bolshevik" institutions of collective farming and replaced them by laws which granted certain individual property rights to land, and stressed the return to private initiative. In reality no such experiment was contemplated or tried. *De facto*, the collective farms were kept as such, while *de lege* they were "transformed" into farming co-operative associations. The high commissioners divided their areas into general districts corresponding to the areas formerly serviced by the Soviet MTS stations, and reopened these machine tractor and repair stations under an over-all *roof* organization which became the seat of the commissioner. The MTS stations are responsible also for supplying the kolkhoz as well as the noncollectivized individual farmers with hand tools and farming implements. All the necessary materials are sold to the MTS stations through the central selling agency of a cartel of agricultural machinery and tool factories. In the Ukraine, for example, 28 factories producing farm machinery, located west of the Dnieper were reopened and organized as a cartel under the *Landmaschinen-Industrie-Ukraine, G. m. b. H.*, at Kiev.

With that portion of the farm population which remained, agricultural production on former kolkhoz farms and individual peasant farms was thus re-established under the command of "leaders" or managers imported by the German administration. Many Dutch farmers were persuaded if not coerced in various ways to go to the Ukraine as managers of kolkhoz farms or groups of kolkhozi. A respectable number of previously state-owned and operated large estates, the sovkhozi, numerous abandoned kolkhozi and also many abandoned individual peasant farms had to be dealt with. All, or at least as many as could be handled, were turned over to the Ostland corporation to manage and operate. The Ostland corporation had to furnish managers and whatever labor it could find for hire, recruit from the occupied population, military prison camps, or concentration camps.

To grasp the size of the administrative job of the two high commissioners and their respective staffs, it may be said that according to German statements, the occupied Russian territories by the autumn of 1942 consisted of 102,000,000 hectares, 34,000,000 of which pre-

viously had been cultivated. This area held a population of 52,000,000 in 1939.⁸

When the Russian armies retreated, they applied the scorched earth policy quite thoroughly, destroying or removing as much of the power equipment on farms as they could, evacuating the most skilled of the MTS station and kolkhoz personnel. Yet the Germans were able to restore farm operations to some extent. It will be seen later that in spite of the promise of this eastern portion of what we have called Ring III in the Continental fortress economy, it was a mirage which vanished abruptly when the 1943 Russian offensive liberated most of the area.

To sum up the organization and administration of the Continental food realm under the so-called "New Order," it is apparent that two main ideas have oriented the blueprints. First, a broadened, consolidated central block holds the vital industries and a reliable more or less self-supporting food economy, and second, this block is supplemented by contiguous food surplus areas between the eastern Baltic, the Adriatic, and the Black seas. The addition of Europe's best ocean shores for deep-sea fishing on the north side of the Scandinavian peninsula is of a more peripheral nature. Condensed into a brief formula, the plan comes fairly close to the concept of a consolidated central European economic block—Friedrich Naumann's *Mittel Europa*, so popular in Germany during World War I. It is also in essence the line of foreign policy suggested by Hitler and Von Ribbentrop to the Prime Minister of Great Britain during the years of appeasement—"a free hand in eastern and southeastern Europe."

Ring IV will complete the picture of the distribution of weight, importance, and dependence within the Continental food economy of the nazi regime. It is composed of what was the originally unoccupied area of Vichy France, Italy, Albania, Greece, the four large islands of the Mediterranean, and Finland. This ring, from the point of view of the conqueror's food planning board, is a marginal zone of little or no importance. It may yield some food exports, or it may just as well demand some imports. Its significance is primarily a military one. Southern France, Italy, Albania, Greece, and the four islands are ideal terrain for seaborne invasion, which by the end of 1943 had cracked the defenses of Corsica, Sardinia, Sicily, and the southern part of the

⁸ *Aftonbladet*, October 7, 1942.

Italian peninsula. In 1944, the northern coast of France lent itself to similar operations. Finland is the northern anchorage of the eastern front. Southern France has yielded some vegetables and fish for the northern cities and the German occupation forces. Italy has shipped some citrus and deciduous fruit and some vegetables to Germany. Greece has shipped fruits and tobacco. Finland has exported principally wood pulp and timber. Italy has received sugar and loans of grain and potatoes from Germany; Finland, substantial amounts of grain. Albania and Greece, which were under Italian agricultural administration, did not receive the necessary volume of imports, although some grain was shipped from German-occupied territories.

It may seem paradoxical to suggest that the nazis classify these predominantly rural areas in Ring IV as an immaterial marginal zone agriculturally speaking, while they look upon industrial Belgium and Czechoslovakia as parts of the most vital Ring I. Yet it conforms logically to the concept of German *Wehrwirtschaft* and *Grossraumwirtschaft*. The best evidence for the accuracy of this interpretation is the absence of any efforts on the part of the nazis even to influence the agricultural or food administration in Ring IV. Only since the surrender of the armed forces and the occupation of northern Italy by the German army, has Germany been forced to supervise the Italian food economy.

Prices, the Vital Instrument of Food Strategy within the Fortress

Next we must learn by what methods and policies the nazis have managed the agricultural resources of the Continent, and what effect such policies have had on the productive plant and its performance. We will need to know something about the probable volume and nature of food reserves, the condition in the food market in various countries, and the degree of underconsumption to be expected by the end of the war.

When the advance of the German army brought one country after another and all its agricultural resources into the nazi-controlled food orbit, a policy for obtaining the most productive work and the most compliance with production planning had to be devised. Since the nihilistic nazi regime did not recognize moral principles but avowedly made success the only criterion for the choice of means, the

whole range of methods of influencing people, from persuasion and economic inducement to outright terrorization, has been considered legitimate. Nearly every device of persuasion has been applied somewhere in some degree.

However, a survey of the nazi policy as it applied to treatment of farmers at home and in occupied countries reveals the surprising fact that contrary to their cynical philosophy about the human beast and their utter contempt for the profit motive, the nazis have, in their efforts to stimulate agricultural production, relied at least partly on the powerful tool of profitable prices. Knowing only too well what happened in Russia when the peasants refused to comply with the wholesale expropriation of their produce, and when mass collectivization was ordered, nowhere have the nazis relied exclusively on coercion. In Germany, very few farmers were ever sent to concentration camps, and the few who went were quickly released because they were needed on the farm. In Poland and occupied Russia, coercion has been used to a much greater extent than in other countries for several reasons. Nowhere else had warfare disorganized and disrupted agriculture so much as in these eastern areas. Nowhere else were so many people on collective farms in the position of poor peasants, farm laborers, or their equivalent. Yet even in the east high prices for farm products have been the device most often employed by Germany to get the desired results usually in combination with production and delivery quotas. The official German journal of statistics⁹ published in December, 1942, an article that showed how nazi economic planning has changed the slope of grain prices on the Continent. The vicious inflation that has swept over the lower Danube basin has not invalidated the price relationship.

As Chart VI indicates, the slope of rye prices which before the war descended from Germany and Czechoslovakia toward the east and southeast was partly reversed in 1942 and in general changed so much that the eastern regions received much better prices than those prevailing in Germany. A serious setback to this policy has been that war conditions have made many of the goods farmers buy so scarce that good money prices may mean little real purchasing power. Even in the absence of goods, however, good farm prices may mean a great deal to farmers who have to face heavy taxes, interest payments, and high operating expenses. They dread becoming insolvent and losing

⁹ *Wirtschaft und Statistik*, December 1942, p. 422.

their farms. Naturally, the price incentive operates best where farmers think in commercial terms and are skillful managers, while it is much less effective among subsistence farmers.

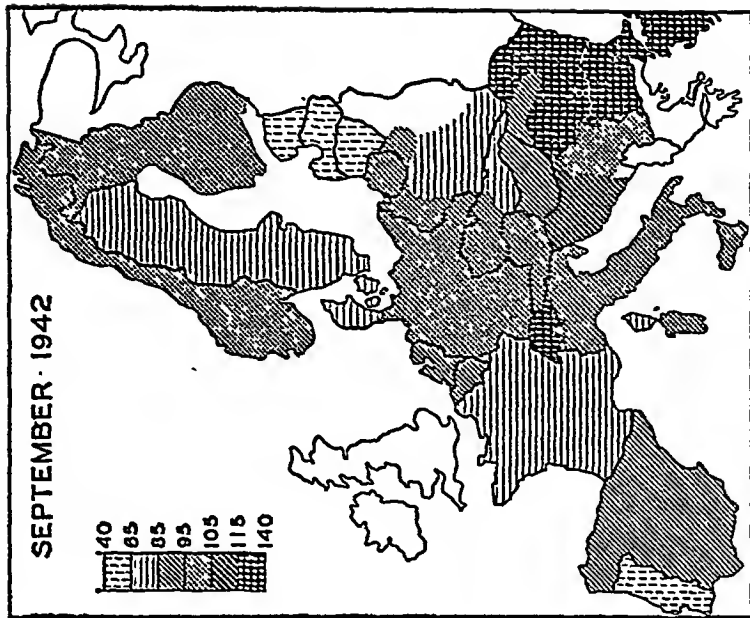
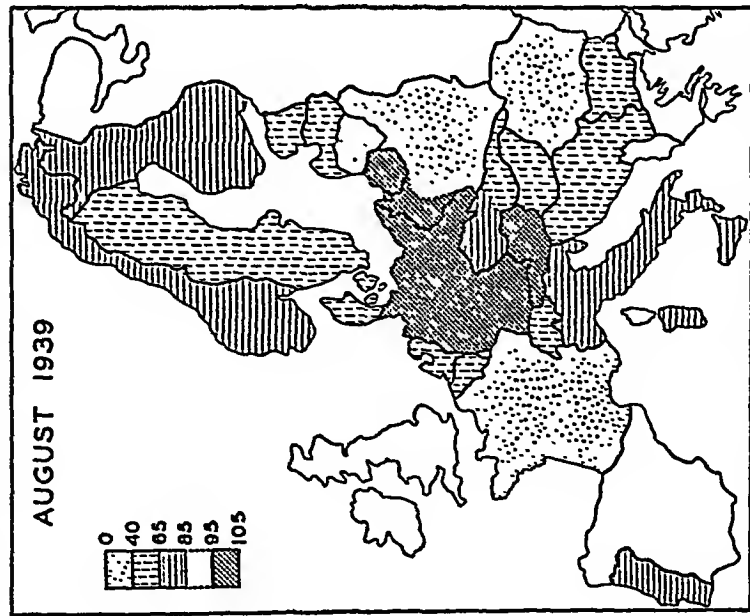
In Germany, agriculture has been kept on a profitable basis during the war, as it was in the later prewar years, aided by subsidies to hold down the cost-of-living index. A similar policy seems to apply to Denmark, Holland, and Belgium. Improved prices paid to farmers in these as well as other countries does not imply that the German consumer has to pay more than before, because the Reich's clearing system for all foreign trade as well as the Reichsbank's power to adjust the exchange rate for the currencies of all occupied countries offers ample opportunity to eliminate such undesirable effects upon the domestic German price level. Domestically the method of subsidizing food has been used in order to prevent a rise in the cost-of-living index.

While prices have thus been the chief means of persuading Europe's farmers to produce as much as they can, it has been only one device among many. Production plans have been translated into quotas of production goals for every farm wherever the agricultural administration was able to reach the individual farmers. In many instances permission to purchase means of production such as seed, fertilizer, motor fuel, or spare parts is granted on the condition that production quotas be met. For some products such as oilseeds a bonus for expanded production is paid in the form of an extra ration of vegetable oil, and a generous allowance of oil cake for feed. In former Russian areas, the promise to return the collective land to individual farmers as private property was made with the proviso that a certain minimum acreage be cultivated.

Since a fair rate of agricultural production in no way promises, much less guarantees, a satisfactory supply of food for the armed forces and the nonfarming part of the civilian population, much more ingenuity was required to institute controls for the delivery of produce into the legal channels of the market. An almost airtight system is applied within Ring I. It requires each farmer to report the output of his products, provides for a check and audit of his report with sample tests of its veracity, and for a schedule of the stipulated quota covering the entire crop year.

These quotas are reinforced by orders that control the way in which food products may be used on the farm. If all the wheat produced minus seed requirements is needed for bread, the full delivery

CHART VI. RYE PRICES IN CONTINENTAL EUROPE IN PER CENT OF GERMAN PRICES, 1939 AND 1942 *



* Data from *Wirtschaft und Statistik*, December 1942, p. 422.

quotas are supported by an order prohibiting the use of wheat as feed enforced by a severe penal code. To make full delivery doubly sure, the price of wheat is fixed in such relation to eggs, milk and other animal products that it becomes profitable to sell all of it, and feeding wheat to animals means losing money. A complete regimented economy can exert pressure in connection with almost every single action of the individual or wherever the producer receives from the government permission to buy rationed goods or services. Fulfillment of delivery quotas has been made a prerequisite for innumerable permits and allocations of rationed or regulated materials. On the other hand, the farmer had been relieved of the tools which might tempt him to break the law. A maximum of milk is earmarked for the creameries for separation and butter-making. To make certain that farmers will not hold back the milk, separate it on the farm, make butter and sell it in the black markets, the government has expropriated all farm separator machines and has made it a criminal offense to possess one.

Owing to these intertwined premiums, penalties, and multiple pressures, the farmer cannot easily hold back much of his produce to sell in the black market. A vigilant policing and detective system, brutal penalties for all parties to a violation, relatively satisfactory income conditions and satisfactory rations actually on hand for farmers are other safeguards against the disappearance of large quantities of food into the black market.

The forceful control and adjustment of consumption and the maintenance of well-filled public granaries are essential parts of the administrative machinery assuring a smooth performance of nazi war food economy, just as much as they have assured a steady flow of food in Great Britain and the United States. The methodology of rationing was developed to a remarkable degree of perfection in Germany while preparations were being made for war. Political tyranny permitted the design of a rationing policy that can more or less ignore consumer preference and follow closely the principles of greatest economy and efficient use of a given amount of supplies.

Again it is to Ring I of the fortress that rationing is applied with this rigidity, and even there it is not uniformly applied. The German rationing system and the guaranteed supply of the rations pertains only to the "Greater Reich": the Reich of the Versailles Treaty plus Austria, Sudetenland, the Saar, the annexed Polish provinces, Danzig,

in Continental Europe during the war is found in the calculations made by John H. Richter, the expert on Continental agricultural production in the Office of Foreign Agricultural Relations in the United States Department of Agriculture. For years the Department has been the world's most resourceful and best informed institution with reference to international agricultural conditions.

In his elaborate balance sheet of prewar and wartime food production and consumption in Continental Europe,¹⁰ Richter estimates that in the crop year 1941-42 Continental agriculture produced 254,000,000,000,000 calories of foods of vegetable origin, compared with 253,000,000,000,000 in prewar years. For the grand total production of foods of animal origin, Richter estimated a 1941-42 output of 53,000,000,000,000 calories compared with a prewar output of 77,000,000,000,000. If the 8,000,000,000,000 calories of prewar food of animal origin which were produced from imported feed are deducted, 53,000,000,000,000 calories have to stand comparison with 69,000,000,000,000 calories prewar. These best available overhead estimates give an excellent idea of what has happened to agricultural production up to the crop harvested in the fall of 1941, and animal production to July, 1942. The figures cover all of Europe outside the Russian boundaries, thus including the four neutral countries.¹¹

According to this estimate, and ignoring the 2.4 per cent of all calories converted for imported food, total Continental production of food in 1941-42 was 4.7 per cent lower than in 1936. The curtailment lay exclusively in the field of animal husbandry and the feed supplies for it. Measured in calories and leaving unconsidered the production based on imported feeds, the output of milk and dairy products decline 22 per cent, that of all meats including poultry 21 per cent, that of hog fats and tallow 19 per cent, and that of eggs 50 per cent. If the production based on imported feeds is included in the output of animal products, the decline is naturally greater. The corresponding data are: milk and dairy products down 29 per cent; meat and poultry down 30 per cent; hog fats and tallow down 31 per cent; eggs down 52 per cent.

For a critical evaluation of this total Continental balance sheet,

¹⁰ U. S. Dept. Agri., *Foreign Agriculture*, April 1943, pp. 86-87.

¹¹ The 254,000,000,000,000 calorie figure covers some materials which in prewar years were used for feed and in 1941-42 were diverted to food.

some basic observations derived from continual examination of current information about individual countries for the years in question may be helpful. Mr. Richter's balance sheet compares the crop of 1941 with the crop of 1936. Figures are available for three Continental crops since then. One cannot operate with simplified trend lines, and conclude from the rate of decline in production recorded for the interval between prewar and the level of the 1941-42 crop year that the same rate of decline has persisted throughout 1942-43, and still holds for the 1943-44 crop year ending on June 30, 1944. Even agricultural economists often overlook the influence of weather, in particular the amount of effective soil moisture. This factor is so powerful that it can overshadow, overcompensate or exaggerate the effect of the production factors under human control, such as application of various fertilizers, methods of cultivation, and even considerable changes in acreage. Lack of comprehension of the wide range of crop yields per acre possible because of the influence of weather alone is responsible for the majority of false prognostications of European war food supplies.

The years 1938 and 1939 were favored by good weather and saw two exceptionally good crops. They were followed by three years of poor weather in the growing season, and with two of the hardest winters on record. A German agricultural experiment station in the *Nordmark* recorded that frost penetrated 11 centimeters in the ground in 1939-40, 92 centimeters in 1940-41, and in 1941-42 as much as 115 centimeters. In the two previous winters there had been 58 days of frost, but no less than 82 in 1941-42. In the latter case all the fall-sown oilseeds, one-third the fall-sown grain, and in many parts of the country almost every fruit tree, were killed by frost. Moreover, 1942 spring sowing was delayed three weeks. These hard winters swept over all of northern Europe. The 1941 grain crop was damaged also by too much wet weather during the harvesting and fall sowing seasons. In 1943 an early spring and warm weather followed a relatively mild winter, but in the critical period of May and early June, when easterly winds prevail, serious drought developed all over the Continent, deep into Russia. For some time it looked as if the failure of the grain crop was certain. The nazi food administration girded itself for the worst, curtailed rations, restricting livestock feeding still further. Miraculously, warm rains began to fall at

the last minute. The crops recuperated and continued to improve. Contrary to all expectations, the 1943 grain harvest was the first really good one since 1939.

The following tabulation shows the fluctuation of the European wheat crop in Continental Europe excluding Russia, as estimated by the Food Research Institute,¹² in million bushels:

Year	Total	Four neutrals	Others excluding Danube	Lower Danube
1938	1,778	149	1,163	466
1939	1,621	162	1,008	451
1940	1,225	111	819	295
1941	1,345	139	876	330
1942	1,240	152	823	265
1943	1,425	130	920	375

Other crops had better results than wheat in the critical three years. In 1940 the Continent harvested a large crop of potatoes, in 1941 a fairly good one, in 1942 a bumper crop but in 1943 a miserable one, which yielded 20 per cent less than in average years. The important rye crop was considerably below average in 1940; average or slightly above in 1941.

In wartime adjustments the greatest emphasis of crop production has been laid upon an increase in the acreages of oilseeds, sugar beets, potatoes, and truck crops. Oilseeds are sorely needed to relieve the shortage of edible and soap fats because overseas imports have ceased. Increasing oilseed acreage has been especially successful in France, Belgium, Holland, Denmark, and Germany. The Continental acreage of sugar beets, the most labor-intensive and high-yielding crop, was in 1943 expanded by 11 per cent beyond prewar levels (excluding Finland, Sweden, Slovakia and France). Hungary, Switzerland, Turkey, and Rumania cultivated from 30 to 40 per cent more acres than in 1937-41. Potatoes are the full equivalent of bread grain as well as feed grain, yielding about twice the calories per acre that the grains do. Germany, Denmark, Holland, Belgium, Switzerland, Sweden, Italy, Hungary, and Spain all had in 1942 a considerably larger potato acre-

¹² Helen C. Farnsworth and V. P. Timoshenko, "World Wheat Survey and Outlook, May 1944," *Wheat Studies*, May 1944, XX, 206.

age than in 1939.¹³ Truck crops yield at least as highly in tons as potatoes, and contribute to the diet many valuable mineral-bearing foods. Potato culture has expanded almost everywhere, although for the Continent as a whole the increase is not sensational. The most striking increase appears in the expansion of vegetable acreage. All countries where production techniques are developed have made much headway in supplementing diets with vegetables unrationed because they are perishable products. Some German data may illustrate the campaign to expand commercial vegetable production:¹⁴

Year	Acreage (1,000 ha.)	Crops (million metric tons)	Crops in Per Cent of 1939
1939	138	2.54	100
1940	164	3.08	121
1941	211	4.11	162
1942	313	6.43	253
1943	393	7.10	279

The crop of commercial market vegetables has thus been almost tripled during the war years. Germany, Holland, Denmark, Belgium, France, and Switzerland have made great efforts to dehydrate and can much of the crop at the height of the season to carry it into the winter months. Under the pressure of war even refrigeration has made great strides in western Europe.

Another important expansion in food production, for which no statistical data are available, has taken place in uncounted millions of "victory" gardens. Necessity has persuaded Europeans to a far greater extent than it has Americans to plant vegetable gardens. The contribution to the kitchen from this most intensive cultivation by consumers can scarcely be overestimated. In the United States 12,000,000 more vegetable gardens than in peacetime have produced in 1943 an estimated crop of 4.5 million tons of vegetables.¹⁵

The Reduction of Livestock Herds

The chief adjustment within the Continental food economy has not, however, taken place in primary production, that is, production

¹³ International Institute of Agriculture, *Monthly Crop Report and Agricultural Statistics* (Rome), February 1943, XXXIV, 53S.

¹⁴ Pester-Lloyd (Budapest), July 11, 1943. Data reported as official by *Statistisches Reichsamt*.

¹⁵ *New York Times*, October 30, 1943.

of plants, but in the conversion of feed into animal products. This is the most logical and seasonable adaptation whenever the grand total of available food calories is short or threatens to become short. The detour of converting edible vegetable foods into animal products involves a net loss in caloric energy which ranges all the way from 40 to 90 per cent according to the composition of the feed, the type and age of the animals, and the type of animal product obtained. For practical purposes it is advisable to calculate with losses near the upper limit. Such a loss is unavoidable wherever inedible materials such as grass, clover, alfalfa, or fodder beets are fed, but it is plain folly to feed grain to animals when there is not enough bread grain for all the people.

The various nations have decided to reduce some of their livestock herds, thereby making a considerable and actual net gain in available food energy which ranges from 75 per cent in feeding pigs to 90 per cent in feeding poultry. Their diet has thereby become more frugal, and contains less of the delectable items which a highly advanced food economy enjoying international exchange had presented. This nevertheless does not imply that a predominantly vegetarian diet of this sort must necessarily be inadequate, as British public health reports for the war years bear out.

The reduction in livestock so far has remained within the bounds of desirable economic adjustment, and has by no means dangerously depleted stocks. Since the chief purpose of reducing livestock feeding is to save grain for direct human consumption, the numbers of chiefly grain-converting animals must be reduced most. Hence chicken flocks were much reduced, especially where they were customarily fed on grain imported from overseas. By July, 1942, the Danish poultry flock was down to 11,000,000 birds compared with 29,000,000 in 1939. The Dutch flock was cut much more—from 33 million in 1939 to 3.8 million in 1942, but increased to 3.9 million in 1943.¹⁶ Most of the other countries did not need to go so far because their smaller flocks had a better basis of absolute chicken feed (feed nothing but chickens will eat, i. e., waste and worms) on farms—and depended less on commercial grain and protein concentrates. In 1942 the German flock was curtailed only 13 per cent. The pig herds met the same fate. Denmark had in October, 1939, a total of 3,192,000 pigs. By March, 1942, there were only 1,267,000 pigs left, but by January, 1944, with an

¹⁶ *Berliner Börsen Zeitung*, December 24, 1943, p. 4.

expanded domestic potato and grain crop, the herd had increased to 2,291,000.¹⁷ The Dutch pig herd was cut from 1.6 million prewar to 498,000 in 1943.¹⁸ The German pig herd was reduced to two-thirds of the prewar average in 1942 but was increasing substantially in the latter part of 1943, to be curtailed later owing to a shortage of potatoes. In France the prewar staple of 7,000,000 swine had fallen slightly below 5,000,000 in 1942. The Swiss curtailed their herd from 880,000 in 1939 to 629,000 in 1943, and further in 1944. In central and south-eastern Europe the reduction probably remained within much narrower limits than in Denmark. In general, reports indicate that in 1942 the lowest status was passed and in 1943 recovery of the staple was under way.

Reduction of numbers of chickens and pigs is quickly reparable as soon as more feed becomes available. Both types of animal production permit technically a restoration of numbers and output of products up to or beyond prewar levels within a single year.

The situation differs in the case of the agriculturally all-important cattle herd. In prewar years the Continent had roughly 110,000,000 head of cattle, most of it dairy breeds. More than half the world's milk output came from Europe excluding Russia. This herd in prewar years supplied annually something like 5.5 million tons of beef and veal, and 110-120,000,000 tons of milk. It utilizes a vast acreage of land, which is permanently under grass because it is too wet or too steep or too high to plant to crops. This herd is the most important source of fertilizer so essential to the maintenance of high crop yields on arable land. It takes four years to raise a cow and realize a full milk yield from her. A cow is so valuable that once a small farmer sells several of them and uses the money it takes him years to save enough for replacement. Killing 1,000,000 chickens need not amount to much. Killing 100,000 cows may mean a great deal.

Being fully aware of the vital importance of the cattle herd and of the technical impossibility of restoring losses quickly, all governments as well as the farmers have exhausted all other reserves first to keep the cattle herd (essentially cows) intact so far and so long as possible. All available information points to the conviction that this

¹⁷ Data from International Institute of Agriculture, *Monthly Crop Report and Agricultural Statistics* (Rome), February 1943, p. 58S; *ibid.*, June 1943, p. 240S and other sources.

¹⁸ *Berliner Börsen Zeitung*, December 24, 1943, p. 4.

policy has up to now been successful. The immediate curtailments of hogs and chickens and the reduction of meat rations to consumers put into effect in some countries have successfully checked a later depletion of the cattle stock. Germany maintained her cattle herd through 1943 almost at the 1939 level. Because the pig herd in 1942 was very low, a small cut had to be made in meat cattle, while the herd of close to 10,000,000 dairy cows seems to have been sustained. In Holland the grass acreage was gradually reduced from 1.3 million hectares in 1939-40 to 1.1 million hectares in 1943-44 and the herd of milk cows culled from 1.5 to 1.1 million head.¹⁹ In Denmark the cattle stock was reduced from 3.3 million in July, 1939, to 2.9 million in July, 1942, and the cow herd from 1.6 to 1.4 million head in the same period. By July, 1943, the cattle stock had increased to 3,000,000 head. In 1942-43 the French cattle herd reached its prewar count after a loss of roughly 10 per cent in 1940. The number of cows recorded in the 1942 census was not quite up to 1939 status, but it may safely be assumed that in 1942 not all cows were reported. Military occupation, embittered resistance against the Vichy regime and an ubiquitous black market for all rationed goods are not exactly conducive to perfect honesty in declaring vital farm data. The weight and milk yield of the herd is said to be still below prewar. The Dutch cattle stock at the end of 1942 was reduced only to 2.2 million head compared with 2.6 million in prewar years. Some countries have managed to maintain their livestock herds at prewar numerical strength.

Foreign Crops and Markets published a survey on the changes in livestock in Europe from 1939 to 1942. The tabulation on page 141 shows the result described in detail above.²⁰

However, by 1944, the situation as to cattle and hogs had decidedly improved due to the adjustment in crop production and the good grain crop of 1943. Cattle herds in France and in the Danubian basin except Hungary have improved particularly due to the tendency of farmers to hoard grain in this form as long as industrial goods are scarce and meat fetches exorbitant prices in the black market.

So far Europe's agricultural plant has been less seriously depleted than the length of the war and the extent of total economic warfare

¹⁹ Helen C. Farnsworth, *Livestock in Continental Europe During World War II*, Food Research Institute, War-Peace Pamphlets 6, Stanford University, Calif., September 1944. Cf. charts on changes in livestock numbers, pp. 18-19.

²⁰ U. S. Dept. Agri., *Foreign Crops and Markets*, October 1942, p. 251.

Year	Sheep * 14 Countries	Cattle † 21 Countries	Hogs ‡ 17 Countries
1939	78,414,000	95,933,000	66,303,000
1942	72,759,000	80,150,000	48,114,000
Percentage decrease	7%	16%	27%

* Norway, Denmark, France, Spain, Portugal, Italy, Switzerland, Czechoslovakia, Poland, Greece, Bulgaria, Rumania, Estonia, Finland.

† Norway, Sweden, Denmark, Netherlands, Belgium, France, Spain, Portugal, Italy, Switzerland, Germany, Austria, Czechoslovakia, Poland, Yugoslavia, Greece, Bulgaria, Rumania, Latvia, Estonia, Finland.

‡ Norway, Denmark, Netherlands, Belgium, France, Spain, Portugal, Italy, Switzerland, Germany, Czechoslovakia, Poland, Yugoslavia, Greece, Bulgaria, Rumania, Finland.

would suggest. Despite many serious handicaps and inconveniences, public policy in every country endeavors to keep agricultural production up or to expand it. In many countries, and in many branches of agriculture, moreover, progress has been made, particularly in the milk-processing industry, in refrigeration of fruits and vegetables, and in dehydration of many foodstuffs.

The Effects of War and Occupation upon Soviet Agriculture

The Continental area in which agriculture has definitely suffered is the German-occupied sections of Soviet Russia, where thousands of villages and farmsteads were burned to the ground, population and livestock were destroyed or evacuated, railroads torn up and uncounted millions of acres abandoned to weeds.

The war broke the world's communicating system of agricultural areas into several compartments. Nazi Europe is one of them, composed roughly of 350,000,000 or 400,000,000 people. Soviet Russia is the adjacent compartment, separated by the movable partition of the Russo-German Front. While nazi Europe has been cut off by blockade from outside supplies and lives on the output of European agriculture alone, Soviet Russia has been able to obtain food imports from overseas, although at the expense of severe strain. But in spite of these supplementary supplies, Russia's food situation has become critical, because large food surplus areas were captured and upon being retaken were so devastated that they no longer had anything like their normal value.

By November, 1942, when Germany made her greatest expansion into Russian territory, an area was occupied by the enemy containing in prewar years 33 per cent, or 59,000,000 of Russia's population and the following percentages of the country's agricultural output, measured simply by the area's proportional number of animals and acreage of crops: ²¹

Beef, Veal and Milk	33 per cent
All Grains	35 per cent
Pork and Bacon	58 per cent
Vegetable Products:	
Cotton and Cottonseed	16 per cent
Flax and Linseed	40 per cent
Potatoes	43 per cent
Sunflower Seed	54 per cent
Hemp and Hempseed	60 per cent
Sugar, Beet tops, Leaves, and Pulp	85 per cent

The prewar population was not all left in the territory when the German army conquered it. The soldiers drafted from there moved out with the army. A substantial force of railroad personnel, MTS station mechanics, tractor and truck drivers, skilled workers and civil servants, was also evacuated. Yet there is evidence that from 40-45,000,000 people were left behind and came under German occupation. If this is true, the remaining free Russian territory had to feed from 13-18,000,000 more people than in prewar years, among them some 4-5,000,000 soldiers who needed more calories than the per capita average of the civilian population. To illustrate the point, 8,000,000 German soldiers receive as much meat under army rations as 28,000,000 normal adult consumers, and as much bread as 20,000,000 normal adult consumers. All those civilians who are not heavy workers and on special rations are normal adult consumers. Russia had also to meet the heavier bread requirements of workers in essential war industries.

It is true that until the summer of 1942 Russia's food position was still fairly secure due to large war reserves of grain and the possession

²¹ Data computed by Dr. Pavel Egoroff from official Russian statistics, especially *Statisticheskii Sbornik* (Moscow), 1939, pp. 118-123.

of large parts of the areas later lost, but it will be seen that during the winter of 1942-43 it began to deteriorate.

In order to weigh the percentages of lost production previously cited, several qualifications are essential. While the actual loss of population in the occupied area at its maximum (November, 1942) was roughly 25 per cent of Russia's population, its equivalent in terms of food requirements was much smaller. The proportion of lost production was on the other hand larger than the figures indicate because they give only the proportion according to livestock numbers and acreage of crops. For grain, potatoes, and sugar beets, the yield per acre was considerably higher in the lost territory than in other parts of Russia. Thus the loss of 35 per cent grain acreage may have meant a loss of 40 or even more per cent of the grain crop. If the population loss was equivalent perhaps to only 20 per cent or less, then a deficit of grain for 20 per cent or 35,000,000 people has opened up. In a country in which normally 70-80 per cent of all the calories in the diet are derived from cereals and potatoes (in wartime more) this creates a very critical situation. If one calculates the average prewar intake of bread grain per capita of the population including the soldiers as roughly one-fifth of a metric ton, this deficit would amount to 7,000,000 tons of grain. The net loss in potatoes was equivalent to another 2,000,000 tons of grain. A loss of a food supply equivalent to 9,000,000 tons of grain or grain value (i. e., potatoes) and to at least 2,000,000 tons of sugar, plus 300,000 tons of vegetable fats, and 1,000,000 tons of meat is of such magnitude that it cuts deep into every civilian's food supply.

Naturally Russia's agricultural commissar and his administration have not been idle. Grain and oilseed production have expanded in the free areas. In 1941-42, 5,000,000 more acres were sown to grain; in the autumn of 1942 another 6.4 million acres.²² How much this addition means in yields, and how far the former yields have been sustained is beyond our knowledge.

The Russian food situation became worse—at least for the duration of one crop year—as the Red army succeeded in liberating large occupied areas. By July, 1943, North Caucasus and the region between the Don and Donetz rivers were liberated. From July to December, 1943, all the fertile land east of the Dnieper comprising the eastern half of

²² *Sotsialisticheskoe Sel'skoe Khoziaistvo*, January-February 1943, p. 35; *ibid.*, March-April 1943, p. 3.

the Ukraine was freed. By July, 1943, probably 10,000,000 of the original population, and by summer 1944 perhaps several million more people were repatriated. Russia's food supplies are seriously burdened because she is obliged to feed these repatriates.

Up to the date of this writing there is no other area in Europe, or in the world, where agriculture has suffered destruction of physical production assets similar to that along the Russian border and areas of penetration by the invading German armies. Nowhere else has such deliberately planned, and resourcefully executed paralyzation of all the secondary services so essential to the proper functioning of agriculture taken place. Only the eastern part of Poland has witnessed such wanton devastation of cities and farms alike, but there the curse of war passed only once, and years of reconstruction have repaired a good deal.

But the liberated Russian territory experienced a repeated sweep of destruction. When the Red army retreated it applied the torch to elevators and tool sheds, villages and factories. The "scorched earth" policy was supposed to defeat the German armies and to frustrate nazi plans to utilize the Russian west as a source of grain exports. Nearly all the 36 per cent of Russia's tractors, the 37 per cent of her combine harvester-thresher machines, and the 42 per cent of all trucks of this area were either destroyed, disabled by removing vital parts, or moved out. Much worse was the destruction of elevator machinery, creameries, sugar factories, bins, barns, and living quarters on kolkhozes and sovkhozes farms. The greater part of livestock was slaughtered and lost, a minor part removed or driven into the forests.

As the German army slowly retreated it applied with greater thoroughness the same strategy of feeding scorched earth to the enemy. Sappers and engineer troops were trained in a special demolition school in a Donbas city.²³ Even if no second systematic destruction had been organized and executed, a blighted area would nevertheless have remained. The only great front-line artillery duels in Europe were taking place on the Eastern Front. This is stationary warfare, forced upon the German army by the magnificent staying power of the Russian army. It moves slowly, and hence it is extremely destructive to all the permanent improvements on land, to bridges and viaducts, power dams and power plants, and to every building in industrial areas or on farms. Dynamite and torch, fire and explosion

²³ *New York Times*, November 5, 1943, p. 8.

carried by bombs, mines, shells and flame throwers do the work.

The Russian people left behind in this devastation are decimated by famine and disease, by acts of warfare and reprisal, but most of all by a selective draft by the German forces of occupation that sends to Germany and elsewhere the most useful elements, male and female, old enough to work. Whatever livestock can be moved out is rounded up and shipped back. A Reuters dispatch of October 3, 1943, stated briefly that according to official German high command figures triumphantly broadcast from Berlin, German troops withdrawing to the Dnieper's western banks took with them 106,000 head of cattle, 110,000 sheep, 60,000 horses, and 62,000 Russian civilians.²⁴ The appalling thing is the smallness of these boastful figures. They illustrate how little was left to take alive as booty.

The fields are overgrown with weeds since there is neither manpower nor animal draft power nor tractor power to plow and sow them, nor is there seed to sow, nor food for those who would begin the cultivation, nor will there be for a long time to come. Considering the millions of liberated people, Russia's grain deficit is such that, if shipping permitted, at least 3,000,000 or 4,000,000 tons should be imported, in order to keep the privations of the people within bearable limits and to create some small reserves. Under the given circumstances, whatever the available ships and the port and railroad facilities from Murmansk and Bandar Shahpur (Gulf of Persia) and Vladivostok can bring beyond the military priority equipment is pitifully little. Moreover, most of the food imported is reserved for the armed forces.

Just how serious Russia's food situation is depends ultimately on the size of the stocks of grain available. There is little doubt that Russia's grain reserves have been much larger than is generally realized and that its management and partial disposal has been one of the most vital parts of the country's food strategy. Even without any specific knowledge of the procedures during the war, the foreign observer could guess that Russia did not allow granaries to be caught empty when the war broke. The government which nearly completed its third five-year plan, which had for twenty years struggled with the food situation, which had passed through years of stark famine, and which proved to be in such excellent military shape when its territory was invaded, could not possibly have ignored the most basic require-

²⁴ *New York Times*, October 4, 1943, p. 5.

ments of food reserves, particularly not in view of the accumulation of very sizable stocks in Germany since 1937.

Soviet Russia had rationed bread for the nonfarm population from 1933 through 1935. During those years a special reserve carry-over of 5-6,000,000 tons of grain beyond the 4-5,000,000 tons maximum stock requirements were accumulated, so that in 1936 the country's total stock on June 30 was probably in the neighborhood of 10,000,000 tons.²⁵ During the following years the crops fluctuated greatly because of weather. The years 1937 and 1941 brought bumper crops; 1938 a poor crop; and 1939, 1940, and 1942 average ones. The crop of 1937 probably was closer to 95-98,000,000 tons than the 120,000,000 tons officially estimated. Of the 1942 crop, about one-fourth was probably lost in the process of harvesting. The government collected grain from the farmers and added to its special reserves as follows:

Year	Government Collection	Addition to Reserve	Total Reserve
	<i>(in million metric tons)</i>		
1937	32	5	10-11
1938	18	-	10-11
1939	39	8	18-19
1940	39	8	26-27
1941	?	?	26-27

In 1941 some 9,000,000 tons of the grain reserve were lost to the enemy, since more than a third of all the storage was located in the invaded area. Thus at the end of 1941 there were still 18,000,000 tons of stocks left in the hands of the Soviet government, and the farmers held 5,000,000 tons. In 1942, 7,000,000 tons of the reserves had to be used to supplement the new crop. Yet there were probably still 11,000,000 tons held by the government and some additional grain held by the farmers. The year 1943 saw a vast deficit in grain when occupied areas, needing seed as well as food for its people, were liberated. Moreover, the synthetic rubber industry and the manufacture of explosives required 3,000,000 tons of grain for industrial alcohol a year. The possible grain reserve of 11,000,000 tons would probably be absorbed completely if the city bread rations were not kept as low as they are.

²⁵ The author owes the major part of the estimate of Russia's grain stock position to the courtesy of his colleague, Dr. Vladimir P. Timoshenko.

From these few data which are the best available estimates by American experts, and which naturally contain a considerable margin of error, the reader can at least grasp that the immeasurably greater leverage lies in the intelligent adjustment of food and feed rations, and in using stocks, rather than in importation.

The other great adjustment lies in the reduction of the livestock herd. According to American estimates, the herd on free Russian territory excluding the front zone has declined below the 1938 figures as follows: cattle, 15 per cent; sheep, 20 per cent; farm horses and pigs, 25 per cent. The decline in farm horses is not a gain for the feed requirements, because the decline expresses simply the drafting of horses for the army. The total number of nonmilitary and military horses is probably larger than in 1938, and probably consumes as much or more grain because army horses are fed better rations.

Since, together with the Chinese, the Russian people are among the world's hardiest races, and have demonstrated great physical endurance and mental stamina to stand up under grinding hardship and scanty food supplies, the Soviet Union is determined to shorten the war by sacrificing even dietary necessities, by importing cannon rather than butter to paraphrase General Göring's statement. Russia gets along somehow with her short supplies by tightening the belt, by feeding fewer animals, by scraping together and stretching out a considerable net gain, and by importing partly on American lend-lease account, partly from British sources and elsewhere, substantial amounts of fats, meats, dried milk, and sugar, and relatively small amounts of flour and grain. How black the prospect for an early restoration of agricultural production in the liberated areas must be is best illustrated by the government's decision to let only very few of the evacuated people return to the Eastern Ukraine and White Russia. It would probably take too many essential war materials and in general sap more strength from the war effort than it would add to it by greater food production on devastated areas once they could be restored. In the long run this decision may also be advantageous for the sake of a better distribution of the population with more people living in Siberia, something that ever since Peter the Great every Russian regime has tried to achieve.

In the fall of 1943 Russia made a successful sowing campaign in the Kuban district. In the eastern Ukraine at least some grain was sown. In the western Ukraine the Germans left sown fields behind. With

additional spring sowing under way there is at least enough sown acreage to promise a moderate grain crop—provided adverse weather does not cause a failure. Dispatches of early March, 1944, from Moscow indicated that airplane and ordnance factories are putting great pressure on the production of spare parts of tractors and combines to insure the spring farming campaign.²⁸ With nearly all of her territory liberated, a much more extensive sowing in the fall of 1944 may initiate an era of greater grain supplies for the 1945-46 food-consumption year. During late spring 1944 the Russian civilian population probably passed the worst months of the food situation of this war. Bread and potatoes will probably become more available. To rebuild the livestock herds will take several years.

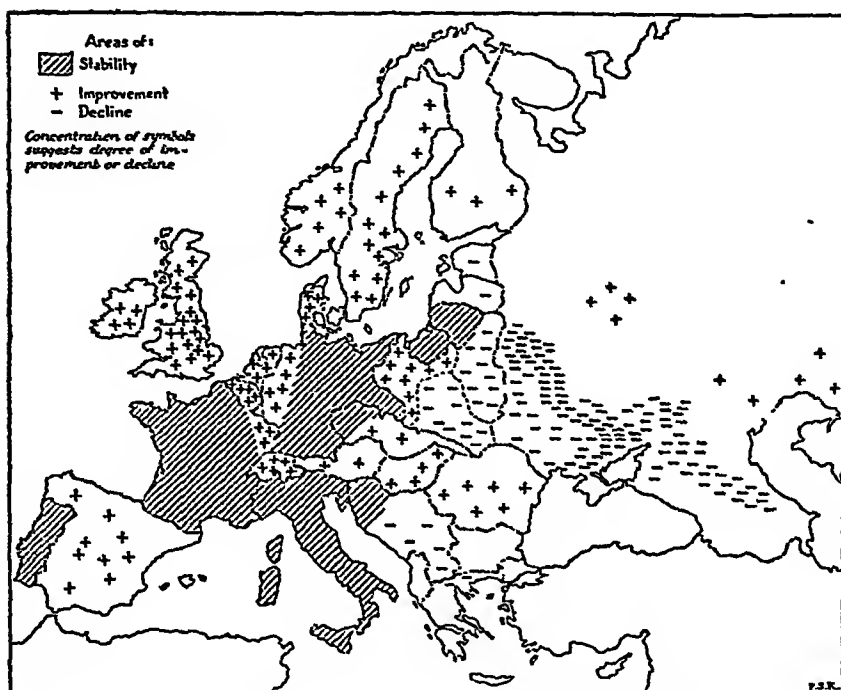
Chart VII indicates which areas of the continent have probably improved their agricultural production capacity, which ones have maintained or only slightly lost ground, and where various degrees of serious depletion have occurred from September, 1939, through early spring 1944.

The chart is self-explanatory. Naturally it does not tell where food is scarcest, because in a country like Belgium or Switzerland, agricultural crop production has been substantially improved during the war and yet with the absence of former heavy food imports the provisions, for the urban population in particular, may be far below the prewar supply: Chapter VI will consider this aspect of the economic effects of the war more closely, since the food shortage constitutes the demand for agricultural exports from overseas.

For the time being we continue our review of the effects of war upon world agriculture up to the winter of 1943-44. Since we have dealt so far with the two huge continental blocks of nazi Europe and Soviet Russia, one of which suffers from the blockade and the other from repeated scorching of the earth and destruction in combat zones, and both of which are making both ends meet mainly by underconsumption and adjustments in diets and utilization of food, it serves our purpose best to survey briefly the other vast but tightly closed compartments of the food realm—those of China and of the Japanese controlled territory.

²⁸ *San Francisco Chronicle*, March 8, 1944.

CHART VII

CHANGES IN EUROPE'S AGRICULTURAL PRODUCTION CAPACITY,
1939-44*Wartime Agricultural Economy in the Asiatic Theater of War*

Japan's aggression, beginning with the rape of Manchuria in 1931, was tacitly condoned by the Great Powers and not actively contested by the League of Nations. It severed China from one of the world's important oilseed export areas and from railroad access to Siberia. Japan's conquest following Pearl Harbor on December 7, 1941, blocked China's every access to the sea and robbed her of that chief highway communication with Burma and India, the Burma Road. In theory China still has roads open to Siberia, but they require tortuous

caravan transportation and thus but a trickle of goods passes through. China's food situation is as notoriously bad as it always has been because of the lack of modern transportation, inadequacy of storage facilities, unchecked recurrent floods, pests and droughts, topped by inadequate means of distributing stocks. Even in times of peace when the great rivers and ocean ports were open to rice ships from Burma and Thailand and wheat ships from Australia, Canada, Argentina, or the United States, it was never possible to avoid recurrent and widespread famine. It is no wonder that when perhaps 250,000,000 or 300,000,000 Chinese are completely shut off from outside shipping a serious famine situation occasionally threatens, as in 1942 and 1943 in Honan Province. Despite heroic efforts by the Chungking government, little if any real change in Chinese agriculture is taking place during the war, except for the fact that a large part of China's 18,000,000 soldiers are raising their own food. The fluctuations in the food supply are caused mainly by the weather. Drought, floods, and the locust plague seriously damaged the 1942 bean and millet crops in Honan then surrounded by Japanese forces on the northeast and southeast; now they suffer most from lack of transportation.²⁷ According to reports by American newspaper correspondents, 40 per cent of the population of the remote villages, or from 1-3,000,000 people, died from the results of starvation, despite the release of army rice stocks. In a mass exodus from Honan toward Shansi along the Lung-hai railroad tracks people tried to escape death.²⁸ In 1943 Kwantung Province, which usually imported much rice from Indo-China, faced serious food shortages.²⁹ In autumn 1943 nine-tenths of the population of the SZ Yap district in Kwantung were reported near starvation.³⁰ By the end of January, 1944, George Edgar Adams, the secretary of the American Advisory Committee for Southeast China reported that a million people died of famine and cholera in Kwantung Province.³¹ Drought, crop failure, blockade, and the additional needs of hundreds of thousands of refugees were responsible for the shortages in this area, which had never been self-supporting.

The years 1938 and 1939 brought bumper crops, 1940 and 1941 fair harvests, and 1942 crops were better than those of 1940 and

²⁷ *New York Times*, October 5, 1943, p. 12.

²⁸ *Ibid.*, February 2, 1943, p. 8.

²⁹ *Ibid.*, September 2, 1943, p. 3.

³⁰ *Ibid.*, August 1, 1943, p. 25.

³¹ Associated Press, Chungking, January 31, 1944.

1941.³² In 1943 most parts of China except Honan had good crop prospects, but transportation is in such deplorable condition that even a good crop does not mean sufficient supplies for deficit areas. This is why many Chinese armies grow their own rice, wheat, and vegetables.

In 1943 the Japanese made the strongest efforts to deprive free China of her most fertile agricultural region, the "rice bowl" of Honan around Lake Tungting comprising 5,200 square kilometers or 520,000 hectares, an area which exports food to Hupeh, Szechwan, Kwangsi, and Kwantung. The Chinese victory at Changteh in December, 1943, saved the rice bowl temporarily, but the assault has been renewed. How serious the threat remains can be seen from the fact that at Tchang, the point of farthest advance, the Japanese forces were only 310 airline miles from Chungking.

Japan, the insular power on the isles located in juxtaposition to the British Isles opposite the other end of the Eurasian continental shelf, had practically solved her food problem in an autarchic fashion when she seized Manchuria and its large export surplus of soybeans and soybean cake. Her rice crop almost doubled in the 20 years from 1913 to 1933. Her conquest of the Chinese coast of Burma, French Indo-China, Thailand, and the Malay States, of the Philippines, and the Dutch East Indies was dictated chiefly by the idea of winning sovereignty over vast market areas as outlets for her industries. She gained control of oil and cotton, in so far as economic concepts had anything to do with it at all but military speculation alone did not determine the policy.

With the seizure of Manchuria, Japan had no serious food problem to solve for her own population or the 30,000,000 Chinese in Manchuria. She had most of the rice, wheat, and barley, and the increasing amounts of potatoes, and all the vegetables and fruits needed; sea food as an abundant source of animal protein, besides her own hog and poultry production; vegetable protein in great quantity from Manchurian and Korean soybeans; and fats again in abundance in the form of fish oils, soybean oil, and rice-bran oil. Indeed, Japan had such a large quantity of fats that her rapidly growing modern whaling fleet could not sell the oil in the domestic market but sold it mostly to England in order to buy petroleum in the Dutch East Indies with the sterling exchange thus accumulated. Such petroleum was often enough

³² *New York Times*, May 23, 1942, p. 6.

shipped in steel drums bought in the United States against dollar exchange obtained for exported silk.

Thus the conquest of the world's greatest export sources of foods and industrial raw materials created overabundance and serious concern rather than satisfaction. Manchuria's soybean crop could no longer be sold to Germany, Denmark, and other small Continental buyers. In 1940 and 1941 Japan did ship 75,000 tons of tea, vegetable oils, meat, rice, and cotton through the Siberian railroad to Germany. In the peak month of November, 1940, the daily shipment of some 2,000-odd tons was composed of: 400 tons of meat, 400 tons of tea, 250 tons of rice, 200 tons of cotton, 700 tons of hides, 40 tons of leather, and 22 tons of tobacco. All this was taken exclusively from occupied China.³³ Yet in view of the total conquest and its yield, these shipments were ridiculously small and did not relieve the market at all.

The sugar of Java and the Philippines, tapioca, tea, palm oil, and palm kernel oil from Java, Philippine copra and coconut oil, and the major part of rice from Burma and Thailand cannot find markets with sufficient purchasing power to buy them. In December, 1943, it was reported that Japan had offered to ship rice as a gift to the famine districts of Bengal. Though this was a clever propaganda stunt, it had the realistic background of a stolen bonanza.

Formerly these exports were destined for industrial Europe or the United States. Malaya's rubber plantations now release a trickle of their produce into Japan's war industries, but even its maximum use will be but a fraction of what could be or normally has been tapped from the trees.

Overnight, Japan has acquired an empire; but she cannot possibly give the occupied peoples in it an equivalent for the foreign demand to which their production had been geared. Japan's industrial war boom operates with utmost concentration upon war production. It does not produce the industrial goods that the civilian economy in the conquered areas needs, and which Japanese and western industries formerly supplied. Japan's domestic war economy must keep down the consumption of all goods in order to siphon most of the purchasing power into government loans. Therefore Japan cannot replace the functions of western exporters or importers. She thus deserts her avowed role in the western Pacific.

³³ *Ibid.*, June 4, 1941, p. 3.

In the plantation economy an adaptation to the new situation would seem to be taking place. A certain amount of the crops for which the market has shrunk or disappeared is being shifted to food production for the native population; the rest is left idle. Thus by necessity the most modern and productive areas of tropical agriculture cease to serve the west whose planter-pioneers built them with western capital, management, and research; they are lapsing into a primitive and native agriculture for Asiatic peasants. The golden loot runs through the fingers of the hands that grabbed it. When the market is lost, the productivity of a resource becomes a nuisance. Some use is being made of the rubber bonanza. Owing to a serious shortage of cotton and a ready military and civilian demand for rubber boots, raincoats, ice bags, and rubber gloves, the Japanese are building rubber manufacturing plants in Macassar or Celebes. In Japan they have converted cotton mills such as the Tokyo, the Kureha and the Kanebo Spinning Companies, and rayon mills such as the Tokyo Rayon Company to the manufacture of rubber goods.³⁴

Despite the abundance of food such as rice, cassava, sugar, and vegetable proteins and fats in the Japanese conquest, it is not at all impossible that in the later stages of the war, food shortages will develop in some of the large occupied cities such as Hongkong, Amoy, Shanghai, or Manila, because of the deterioration of merchant shipping and the fishing fleet, the shortage of gasoline, and the impediments to the removal of food from surplus to deficit areas. These possibilities as well as the greater one of losing the war have naturally been foreseen by the Japanese planning agencies which in February, 1941, began to ration meat and fish as well as rice, sugar, and matches. It came as no surprise, in August, 1943, therefore, when Premier Hideki Tojo proclaimed to provincial governors at a meeting of advisory councilors that full self-sufficiency in food is being planned for Japan.³⁵ Back in 1941, before Pearl Harbor but after the American, British, and Dutch freezing measures virtually cut off all silk exports, efforts were being made to increase domestic consumption of silk and to reduce production. Silk production in 1941 was cut from a preceding average of 700,000 bales to 450,000 bales. Simultaneously, 200,000 acres of mulberry fields were shifted to wheat and barley. Peppermint, tobacco, and tea farms were also induced to cultivate

³⁴ *Netherlands News*, December 1943, VIII, 163-164.

³⁵ *New York Times*, August 19, 1943, p. 7.

wheat and barley. Subsidies were offered to farmers who complied with the program.³⁶

Hopes to deteriorate Japan's agricultural production by capturing the coral atoll Nauru, the main source of phosphate fertilizer, is as much wishful thinking as similar hopes concerning food production in fortress Europe. To brace the food economy on the isles against the disorganizing effects of bombing, bombproof diffused stocks of rice, wheat, barley, biscuits, canned fish and crabs, and canned vegetables, have been established throughout the countryside at strategic points.³⁷

Quite aside from the remarkable stability of the Japanese food position, which can hardly be shattered until a military occupation of the isles is at hand, it seems advisable to envisage the possibility of a protracted defense of the emperor and his cabinet amid the troops on the Japanese mainland, after the defeat of the Japanese fleet and the loss of the island part of the empire. In that case not food shortage but only military defeat will end their adventures and their rule.

In 1936-39, Japan proper had a rice crop of from 66-69,000,000 koku (330-340,000,000 bushels). In 1939-40, Japan imported 2,000,000 long tons of rice from Burma, India, and China. This may have been a precautionary stock piling. The 1940 crop plus imports left a carry-over of 8.4 million koku (42,000,000 bushels).³⁸ In 1941 the rice crop on Japan proper was only 55.5 million koku (278,000,000 bushels), but Korea and Formosa had bumper crops. Yet the Vice Minister of Agriculture, Kazuo Miura, ordered twice as much rice imported as in the preceding year, and Irish and sweet potato flour mixed with wheat flour to stretch the bread grain. The good rice crop of 1942 was reported to have been 67.4 million koku (334,000,000 bushels) while the crop of 1943 totaled 63,000,000 koku³⁹ despite considerable storm and flood damage.

Even if current reliable information is lacking, one can visualize what is taking place in the Japanese-held world. Production on tropical and subtropical plantations is declining. In many plantations with large British and Dutch capital investments, the jungle has already

³⁶ *Ibid.*, October 9, 1941, p. 7.

³⁷ *Ibid.*, November 22, 1941, p. 4.

³⁸ *Ibid.*, November 22, 1941, p. 4.

³⁹ *Pester-Lloyd*, October 15, 1943, p. 11.

closed in. The only form of plantation that will not suffer seriously is that of Hevea rubber trees.⁴⁰

The United Nations

What is left of the world after the deduction of nazi Europe, free Soviet Russia, free China, and the Japanese-dominated part of Asia can be called the nonblockaded food realm of the United Nations, of neutrals and nonbelligerents. By May, 1944, it comprised the Americas, the British Isles, the Iberian peninsula, Africa, the Near East, India, and Oceania, the four large Mediterranean isles, and half of the Italian peninsula. This part of the world harbors 1,150,000,000 people, compared with 350,000,000 in nazi Europe, 300,000,000 in Japanese-controlled Asia, 350,000,000 in free China, and 135-145,000,000 in free Russia as of winter 1942. It comprises the world's two best-equipped large land blocks with modern production capacity, both endowed with the world's two other extensive black soil regions outside of Russia, both with better climatic conditions: Canada and the United States; and Argentina and Uruguay. As to chief commodities, the wartime food realm of the United Nations has among its assets all the world's great overseas wheat-exporting countries (Argentina, Canada, Australia, and the United States), the world's greatest beef, mutton, tallow and lard exporting areas (Argentina, Australia, and New Zealand), the exports of more than a third of the world's butter, several important vegetable fats exporting areas (West Africa, Argentina, and India). Among its liabilities this part of the world embraces the British Isles—the world's greatest food-deficit area, and also the smaller importing nations like Spain, Switzerland, and Sweden, the needs of the Anglo-American expeditionary forces, and whatever other war needs arise, such as those on lend-lease or relief and rehabilitation accounts.

Great Britain.—In Great Britain, the chief object of Germany's counterblockade by submarine and long-range bomber, great strides were made to reduce the food and feed import requirements. Only 28 per cent of Britain's food, measured by its money value, was pro-

⁴⁰ K. E. Knorr, *Rubber After the War* (Food Research Institute, War-Peace Pamphlets 4, Stanford University, Calif., February 1944), pp. 13-14.

duced wholly at home. Based on calorie value, the proportion was probably still much lower. The remaining 72 or perhaps 80 per cent of food and feed normally came from all parts of the world, some of it even from the Continent of Europe.

Decisive blows by the German armies in summer 1940 cut off all supplies of bacon, eggs, butter, cheese, poultry, vegetables, and fish from Denmark, Holland, Belgium, and Norway. The British food situation rapidly deteriorated. The emergency was met by a determined policy of producing more food at home, feeding fewer livestock, distributing and utilizing available supplies more efficiently, building up greater reserves and adjusting the composition of imports. With a governmental subsidy of £2 per acre, British farmers had plowed up 6.5 million acres of grass land by summer 1943. This meant an increase of the tillage 53 per cent above prewar, and was accomplished with the use of 150,000 tractors in 1942 as opposed to 45,000 tractors used in prewar years. Measured in terms of calories, British agricultural production has increased 70 per cent.⁴¹ In 1943 the wheat crop of 115,000,000 bushels was harvested, a crop 45,000,000 bushels greater than for the 1934-39 average. The 1943 acreage of all small grains combined (wheat, rye, barley, oats, and mixed grain) have increased by 66 per cent; potatoes by more than 80 per cent, and vegetables by 55 per cent.⁴² These excellent results were accomplished despite the extreme labor shortage. Some 30,000 Italian prisoners of war, 65,000 members of the Women's Land Army, 500,000 holiday harvesters, the Women's Voluntary Land Corps, and Volunteer Land Clubs, have all contributed their share to the labor supply for Britain's farms.⁴³

While crop production was boosted, feeding of livestock was reduced. For the same reasons as were discussed earlier for the Continent, the British cattle herd was not only uncurtailed, but somewhat increased. On islands sprayed throughout the year by mist or rain from Atlantic winds, and warmed in winter by the Gulf stream, where grass grows better than crops, it is good economy to keep dairy and meat cattle. To pig and poultry husbandry, the same policy adopted in Denmark and Holland was applied, because these animals

⁴¹ Helen C. Farnsworth, "Wheat in the Fourth War Year: Major Developments, 1942-43," *Wheat Studies*, November 1943, XX, 60-63.

⁴² *New York Times*, June 20, 1943, p. 30.

⁴³ *Ibid.*, June 30, 1943, p. 7.

lived almost exclusively on imported feed. Since so many millions of acres of grass land were plowed up while cattle herds were increased, the prewar flock of 27,000,000 sheep had to be cut. By the summer of 1943 the pig population had declined 51 per cent, sheep herds 18 per cent, and poultry flocks 80 per cent.⁴⁴ These adjustments in livestock have affected feed imports: in prewar years the imported feedstuffs average 8.5 million tons, but in 1942-43 a total of 1.3 million tons was imported. Thus British agriculture in the fifth year of the war enjoys far better conditions than it has for a generation. Its equipment, production capacity, and output have been much improved, and the profitability of his business leaves little to be desired for the farmer, although the expansion of arable land has brought much marginal land into cultivation.

Ireland.—Ireland has contributed large amounts of livestock to the war food supplies of Great Britain and improved her own food position by cultivating more land and raising greater crops of wheat and potatoes. In 1943 bread was temporarily rationed.

Canada.—Among the Empire's great agricultural resources, Canada holds the leading position, because she has the shortest and best-protected sea route to the British Isles. The Canadian government geared its farm production program directly to the British food import policies and Anglo-American maritime shipping strategy. Farmers received not only very favorable prices for all the chief products, but special subsidies and other government payments for reducing their wheat acreage. Compared with a prewar average and a 1940 area of 25,000,000 acres sown to wheat and 29,000,000 acres sown in 1941, less than 22,000,000 acres of wheat were sown in 1942. Despite much heavier domestic consumption and exports, Canada's carry-over of wheat, far below or at 100,000,000 bushels from 1937 through 1939, rose to 600,000,000 bushels in 1943. The compensation for a reduced wheat acreage lies in an expansion of the feed grain production. In 1942 and 1943 barley production was roughly three times, production of oats, twice that of 1935-39. The production of linseed in 1943 was 10 times the prewar level. Livestock slaughter yielded twice as much meat (beef, veal, mutton, lamb, and pork) in 1943 as it had in

⁴⁴ Great Britain, Ministry of Agriculture, *Agriculture*, August 1943, p. 218.

1935-39, while cattle, sheep, and pig herds were still increasing.⁴⁵

In view of the abundance of grain, it is not surprising that the chicken flocks increased from 57,000,000 birds in 1939 to 75,000,000 in 1943. In short, Canada's agriculture is in excellent shape, performing remarkably well as a prime source of supplies for embattled Great Britain. Canada's farmers enjoy a better income than they have for decades, and can expect an even better one at least until the war's end.

United States.—In the United States the war has had similar results. Industrial production and employment generally soared to a level which in 1938 or early in 1939 would have seemed fantastic. During those years a national income goal of \$100,000,000,000, aimed at by some planners, was widely considered to be bold in the extreme. Yet by 1943 the gross national product reached \$185,000,000,000 compared with \$89,000,000,000 in 1939. Experts consider it probable that a level of even \$200,000,000,000 will be reached before the war ends. These figures reflect a rise of some 23 per cent in wholesale prices, i. e., a decline in purchasing power of the dollar, yet even if measured in constant prices, the gross national product increased roughly by 60 per cent from 1940 to 1944.⁴⁶

With 53,000,000 people gainfully employed in 1943, and 11,000,000 in the armed forces, the domestic demand for food has widened. At the same time the demand for exports has expanded rapidly. This ideal situation found expression in profitable prices even for most of the marginal producers. Under the stimulus of such prices, plus the effective orientation and guidance of all producers by the United States agricultural planning agencies, America's farmers have accomplished almost miraculous production records, despite the fact that more than 3,000,000 men were drained from the farm population by industries and selective service.

In 1942 farmers boosted the volume of crop production to 123 per cent and the volume of output of livestock to 126 per cent of prewar (1935-39 = 100) production. In 1943 total crop production was only 116, but the output of livestock 138 per cent of prewar. The cattle herd increased from 66,000,000 head in 1939 to 80,000,000 in

⁴⁵ Data based on *Canada Yearbook and Current Review of Agricultural Conditions in Canada*.

⁴⁶ U. S. Dept. Comm., *Survey of Current Business*, March 1943, pp. 10-11; *ibid.*, August 1943, p. 40.

1943, the number of milk cows during the same period from 24.6 million to 26.9 million. The number of hogs slaughtered increased from 68,000,000 in 1939 to 125,000,000 in 1943. The chicken flock on farms (January 1) increased from 418,000,000 in 1939 to 487,000,000 in 1943, and egg production from 42,000,000,000 to 54,000,000,000 eggs. This heavy increase in livestock feeding depleted the stocks of feed grain but did not lower the burdensome carry-over in wheat to a level that would cause real concern. According to the United States official estimate, the country's wheat stocks in July, 1944, carried over from the old crop into the new grain year were 315,000,000 bushels.⁴⁷ A new record wheat crop of 1,115,000,000 bushels adds to the abundance.

After seven years of agricultural adjustment policies which restricted output and in general had to cope with an oversized production capacity and a back-up supply of manpower, the years from 1939 have created a situation in which the Department of Agriculture and the War Food Administration have thrown the throttle of production wide open and are straining every resource to the limit for the sake of expanding capacity and output still more. In this country of food abundance and notorious surplus where consumption was partially subsidized in prewar years and much food was given away, the government has had to call upon the consumers to help with production. Twenty million "victory gardens" contribute substantial supplies of vegetables and some fruit to the nation's wartime diet. To American agriculture the first four and a half years of the war have meant the return of a golden age. Shortage of labor and the resulting return to active farming of retired, aged people, and the call on the young to pitch in with real work earlier than they normally would, are merely the typical corollaries to the fact that agricultural prosperity is dependent upon increasing industrial employment.

Remarkable achievements in quick adjustment have been made within the fats and oils economy of the country. Japanese expansion in the Pacific blocked access to a substantial part of America's imports of copra and coconut oil, palm oil, tung oil, and other tropical and subtropical fats. In two years official production goals for a vast expansion of soybean acreage, peanuts, and linseed were overshot by the farmers. In combination with an unprecedented increase in the production of lard and tallow and the maintenance of high production

⁴⁷ U. S. Dept. Agri., *The Wheat Situation*, August 1944, p. 6.

of cottonseed oil, it has been possible to boost the domestic output of all fats combined (from domestically produced raw materials only) from an acreage of 7.3 billion pounds (1935-39 average) to 10.7 billion pounds in 1943-44.⁴⁸

Thus the country was in a position to export in 1942-43 more than 2,000,000,000 pounds of fats, mainly as aid to the Allies. Ever since 1915, America has been a net importer of fats. Despite the losses in the Pacific she has become a net exporter in the war years. This, as well as her present position as the world's greatest soybean grower, are changes important for the postwar years.

South America and Oceania.—In South America and Oceania, agriculture has benefited from the war, too, enjoying better prices despite the disappearance of the Continental European buyer and the havoc played upon the shipping service for their food exports by the submarine war. Argentina, next to the United States, the country with the greatest and most reliable capacity of production and exportation of food, has done well in making the best of an intricate situation. She has been too well aware of her normal dependence upon the European food market and the dependence of the Europeans upon the South American export markets for industrial goods to break off diplomatic relations with the Axis or fascist Spain or to declare war. As a debtor country whose overwhelming export business is founded upon agricultural products, Argentina cannot ignore the fact that the western hemisphere in general and the United States and Canada in particular are not going to absorb any substantial part of her beef, butter, grain or oilseeds, except for Brazil's limited purchases.

When the blockade closed the European Continent save for Portugal, Spain, Sweden, and Switzerland, Argentina had Great Britain as the primary outlet for her products, and then only in so far as merchant ships could carry the cargo through the Atlantic. In response to the shipping situation various adjustments were made in production. From 1937 to 1942 ⁴⁹ the cattle herd was reduced from 33.2 to 31.5 million head, and the cow herd declined from 14.4 to

⁴⁸ U. S. Dept. Agri., *The Agricultural Situation*, September 1943, p. 3; Karl Brandt, *Fats and Oils in the War* (Food Research Institute, War-Peace Pamphlets 2, Stanford University, Calif., June 1943), pp. 40-44.

⁴⁹ Data from Argentina, *Boletín Mensual de Estadística Agropecuaria*, February 1942.

13.7 million. The sheep herd rose from 46 to 51 million head and the stock of pigs from 4.0 to 5.7 million animals.

The cultivation of wheat was reduced from 8.6 million hectares sown in 1938-39 to 6.7 million hectares for 1942-43, with corresponding reductions in the crop from 10.3 million to 6.4 million tons. Similarly the sown acreage of corn fell from 5.3 million hectares in 1938-39 to 4.1 million hectares in 1942-43. Exports of wheat fell from 4.7 million tons in 1939 to 2.2 million tons in 1942. The latter export was, however, still higher than the 1.9 million tons of 1938. Corn exports fell from 3.2 million tons in 1939 to .2 million tons in 1942. In the case of linseed, another mainstay in Argentina's export trade, production was slightly increased, but exports fell from 1.3 million tons in 1938 to .3 million tons in 1942. Exports of fats, on the other hand, increased intensively and rapidly during the war, as the following data indicate (exports in thousand tons):

Year	Butter	Lard and Tallow	Vegetable Oils
1938	9	69	7
1942	14	128	123

Argentina has almost doubled her domestic oilseed-crushing industry, expanded domestic human consumption of vegetable fats, and used increasing amounts of linseed and linseed oil, in addition to corn, as a substitute for normally imported coal and mineral oil. In 1943 roughly 1.5 million tons of linseed, half in the form of oil, were used as fuel. If one considers the seriousness of the submarine war, it must be said that the export of meat, one of the chief sources of income for Argentina in foreign trade, has been relatively well maintained. In 1942 a total of 573,000 tons of meat and meat products were exported, compared with 630,000 tons in 1939.

Argentina's agriculture has by no means reached a stage of high-pitch prosperity such as the United States and Canada enjoy, and it has naturally suffered from the loss of the Continental European market. Hostilities on the Continent and against merchant vessels have prohibited the full utilization of the country's much greater capacity to produce. The government had to apply various schemes toward restriction of grain and oilseed production—the carrying of large grain stocks at government expense and the burning of some—

and the export volume for animal products has kept the output limited. In 1924 Argentina exported 900,000 tons of meat or 55 per cent more than in 1942. Expanding industrial activity and employment have widened the domestic market for food. Other South American countries and South Africa have become better customers. Yet Argentine farmers are eager to produce and sell much more food and feed abroad.

CHAPTER V

The Probable Condition of World Agriculture upon the Termination of Hostilities

Early Victory or Long Delay

THE previous chapter surveyed in general the effect of the war on agriculture in various parts of the world, particularly in the zones of hostilities, and the nature of the major changes in the world's food economy. While this global review left much to be desired and could scarcely present more than the major proportions and the geographic and political distribution of deterioration, maintenance, or improvement, it has at least shown that up to the start of the great invasion battles the productive capacity of European agriculture was by no means greatly deteriorated. It was shown that in many countries, including Belgium, Holland, Denmark, Slovakia, Switzerland, and several others, primary agricultural production has been improved and that the curtailment of the livestock herds has in most areas been carried out with intelligent discrimination. On the other hand, it was demonstrated that in France and Italy production has been maintained or somewhat curtailed and in eastern Europe and the Danube basin it has been reduced, while in important Russian regions, real devastation of farms, equipment, and livestock has taken place. In developing this picture of blighted areas, the reader became familiar with the important fact that the processes of decline or improvement follow neither a common pattern nor unbroken trends; that strong forces tending toward recuperation are potentially active everywhere; and that in several countries they have so improved that it was possible to overcome the destructive factors.

Should this analysis be correct in its major findings, the most vital question for the reconstruction of agriculture would still remain open: what will be the status of agriculture, particularly in future combat zones and their hinterland, when the enemy surrenders? In other words, how much loss in cultivated acreage, how much deterioration and actual loss of equipment, manpower, draft power, fer-

tilizer and seed supplies, how much depletion in the yields of the land, and how much destruction of livestock, buildings, auxiliary industries and services for agriculture will be evident at the cessation of hostilities?

By their very nature these questions permit only the presentation of certain observations, some arguments based on them, and highly speculative answers as to the range and rank of alternative probabilities. Naturally, such conditional and tentative answers remain unsatisfactory. Indeed, those who scoff at such enlightened conjecture or prognostication as "unscientific" will dismiss them all as worthless. It will be seen, however, that a checkup on the probable constellation of factors and course of events does reduce or even eliminate many of the most popular assumptions.

The popular misconceptions about the fate of agriculture in this war are derived in part from apparently plausible analogies with other industries or on erroneous assumptions about conditions during and after World War I that simply have never been set right.

Unfortunately, our most crucial question defies prediction far more than most others which concern specific details—when and by what method the war will end in Europe, and when shooting will stop in the other separate war in the Pacific.

On February 22, 1944, Winston Churchill, the British prime minister, addressed Parliament in part as follows: ¹

This is no time for sorrow or rejoicing. It is time for preparation, effort and resolve. The war is still going on. I have never taken the view that the end of the war in Europe is at hand or that Hitler is about to collapse, and I have certainly given no guarantee or even held out any expectation that the year 1944 will see the end of the European war, nor have I given any guarantee the other way.

On the whole my information—and I have a good deal—goes to show that Hitler and his police are still in full control and that the Nazi party and the Generals have decided to hang together. The strength of the German army is about 300 divisions, though many of these are substantially reduced in numbers. The fighting quality of the troops is high. The German general staff system which we failed to liquidate after the last war represents an order comprising many thousands of highly trained officers and a school of doctrine of unbroken continuity.

It possesses great skill both in handling troops in action and in their rapid movement from place to place. Recent fighting in Italy should leave no doubt on these points. It is true that the results of our bombing have

¹ Associated Press dispatch, London, February 22, 1944.

made a noteworthy effect on German munitions production. In the people they have produced a dual apathy which also affects munitions production and all air raid precaution services.

Naturally it will make a great difference to the further developments in the world's agriculture if the war in Europe comes to an end in 1944, or if it continues deep into 1945; and the same holds for the war in the Pacific. The longer the war, the more furious the destruction of industries and transportation from the air will be, the more gravely the effects of the war on the various production factors may undermine the agricultural production capacity of the blockaded areas.

For the relief requirements of Europe as well as the beginning of agricultural recovery, it also makes a great difference whether military government is initiated in December, April, or October, because production, stocks, and consumption follow the rhythm of the crop year.

Simply on the basis of our armchair analysis of the economic and military resources of both sides in the conflict, we have held from its earliest phases that the war would last a long time, and would be terminated only by the gradual military conquest of one side by the other in the long pull of harnessing and utilizing the maximum war potential of all resources. Neither a supposed innate superiority of defense or attack, nor special strength in any specific weapons, be they submarines, antiaircraft artillery, supertanks, bazookas, rocket guns, bombing techniques, or pursuit planes will by themselves decide the war's outcome. It is the aggregate total of ultimate effective military striking power and all the productive and moral resources behind it that tilt the scales and decide the issue.

For the further welfare of agriculture up to the war's end the nature of the final phases of warfare will be decisive. Under the impact of ever-heavier bombing, the output of many of the industries that supply tools and implements to farmers is gradually falling off. A certain proportion of the fertilizer-manufacturing plants, particularly nitrogen factories, are being laid idle or cut off from their customers. Transportation deteriorates under the gigantic assaults upon the railroads, viaducts, and bridges. And yet most of the farms are not necessarily directly affected, and shortages of equipment and raw materials would hardly reduce the output more than temporarily. Even in cartelized Germany the auxiliary industries such as cream-

eries, sugar factories and refineries, and flour mills are highly decentralized and moreover are plants that can be repaired in a short time, once industries renew operations and foreign trade makes the repair parts available.

A decision forced essentially by bombing would leave agriculture relatively not too seriously disorganized and depleted, but the major cities and large-scale industries would be badly mutilated.

Consequences of Invasion

How much destruction will have been wrought on agriculture by invasion battles up to the general surrender of the German army or the regional or piecemeal collapse of resistance will depend on the nature of the fighting, the speed developed, the strategy of the enemy's retreat and delaying actions, the agricultural character of the area covered, and the season in which the main movements are executed. A blitzkrieg like the onslaught of the German panzer columns into Poland and France in 1939 and 1940 or General Patton's American tank formations in close co-ordination with the air force in August, 1944, in northern France is the type of warfare least costly in manpower, and also one that leaves in its wake the least physical destruction and damage to agriculture. It knifes so deep and fast into enemy-held territory that the civilians do not have time to flee and abandon their farms. Armies that inch their way forward, as did the Allied armies at Cassino, Florence, and elsewhere in Italy or in the initial Battle of Normandy at Caën and Cherbourg inevitably play havoc with cities, farms, railroads, roads, ports, and everything else that man builds. Heavy artillery and mine barrages are still more destructive to improvements on land than even the heaviest bombing raid. The longer this war progresses, the more evident it has become that the impressive effectiveness of aerial bombardment has not made obsolete the use of heavy artillery. In the final phase of the conflict, the demand for heavy guns and shells has become so great that production shifts have clogged production channels for other war materials. Wherever a real front moves slowly, with great use of artillery and local pincer movements, much destruction must be expected.

The strategy of retreat has almost as much bearing upon the destruction of productive assets in agriculture as has the strategy of

advance on the opposing side. Stubborn resistance and delaying actions call for putting an increasing economic burden of military and civilian supplies upon the advancing forces, and make the liberated areas temporarily worthless to their native people. The retreating German armies may remove from or destroy on the area they must yield the livestock (especially draft animals), the main stocks of staple food and feed, and most of the farm machinery. They may apply torch and dynamite to farmsteads, creameries, and flour mills.

In brief, the same scorched-earth policy which twice or three times blighted German-occupied areas in Russia would once more be applied to other parts of Europe as well as the east. In the Dutch and Belgian Lowlands, flooding the most fertile dyked sea marshes with sea water is one method of covering retreat which is bound to have a deleterious effect upon crops for several years after the inundated areas have been pumped dry.

The civilian population left behind by the retreating armies serves as a still greater tax upon the food supplies of the advancing forces. To feed the armies of the enemy from inhabited terrain stripped of resources, or worse, terrain whose resources have been disorganized or destroyed, and whose civilians are destitute, serves the purpose, in this dark age of total war, of impeding the attacking forces, shortening and improving the defense communications of the retreating forces, and permits them to recoil even from disorderly retreat as soon as the opposing troops halt to reorganize supply lines in the rear. The extent to which retreating German forces will follow that strategy in France, Belgium, Holland, Italy, Poland, and the Danube basin will not depend on any tactical political or moral considerations, but rather on the possibility of carrying out such destruction and then upon considerations of expediency in view of the approaching end. Speedy crushing offensive movement by overwhelmingly superior land and air forces combined is the best and only preventive action the Allies have at their disposal.

Naturally, the economic geography of the areas over which the final battles of the war in Europe will move, to some extent will determine the degree of deterioration in the productive assets and in actual output of food more than others. Among those that will have special weight are topography, the form of settlement, the type of farming, the size of farms, the type of animal husbandry, and the existing capital investment in auxiliary industries. It is easier to scorch the earth

in treeless great plains with large-scale farms or large villages, with big grain elevators at railroad stations or inland ports, large herds of cattle, than it is to attempt to raze heavily wooded, mountainous terrain with many small single farms scattered over a thousand hidden spots and valleys, with flocks of sheep and goats roaming the hills, and with few if any auxiliary industries and hardly any central accumulation of big stocks of produce.

Moreover, it is obvious that the opportunities to destroy agricultural wealth and to plug up the flow of food production on farms increase the more developed and advanced an agricultural system is. As in the case of all such organizations involving natural resources, its specialized performance is invariably man-made, and therefore can just as well be destroyed by man. Where agriculture has not gone beyond the stage of a collecting economy or the "mining" of natural fertility on an extensive scale, it is more difficult to do much serious damage. Yet even in this direction, conditions vary greatly with the economic geography and the particular forms of agricultural enterprise. In order to evaluate properly this aspect of the estimate of the consequences of invasion in view of the reports about military operations, the reader may consult Charts I and XIII, both of which refer to the intensity of farming in various European areas.

On the Russian Front

If the Continental fortress is to be reduced by advancing fronts not only from the south and the west but also by further progress on the Eastern Front, Russia will recover still more agricultural area, and also acquire new territory, e. g., in the Baltic states. In 1944 Russia has regained the western Ukraine, Bucovina and Bessarabia, parts of White Russia, and the eastern parts of Poland. Except for Bucovina and Bessarabia these areas were more or less in similarly blighted conditions as were those adjacent to the east that were liberated in 1943. Whatever livestock existed and the few thousand tractors and trucks and some grain stocks were evacuated by the retreating Germans. The reopened farm machinery factories and the MTS stations were again demolished. Engineers and other skilled personnel were removed to the rear of the receding front. Railroad facilities, bridges, and dams were blasted, rolling stock moved back or destroyed. And the larger grain stores as well as flour mills were set afire or dynamited. Russia has

gained more blighted farm area of potentially high yielding capacity, but the application of several years of strenuous effort and large-scale investment will be required to regain normally sown acreage, and perhaps longer to attain its full production. Upon these fertile regions of the former bread basket, many millions of more or less destitute people have been repatriated. The deficit in civilian food for the country as a whole has thereby increased. The liberated area has moreover consumed a substantial volume of seed grain in spring 1944.

All this might be interpreted as an indication that the food situation in Soviet Russia up to the end of war must continue to be critical. In view of the good crops harvested in 1944 it seems likely that the Russian people passed the depth of wartime food shortages in winter 1943-44. The prospects for a gradual improvement in food supplies are good if the country does not encounter the unpredictable misfortunes of great drought and crop failure and if the Russian armies do not suffer serious reverses. As soon as the Allied drive into the Balkans succeeds, the Germans can be forced out of Greece and the Aegean Islands, and Russia's main gateway to the world, the Dardanelles, will be opened. None of the routes open so far, neither Murmansk, Bandar Shahpur, nor Vladivostok, have any similar capacity, to say nothing of real utility. Once the port of Odessa is restored, Russia's blockade will end. If she should need and want it, she can receive grain in bulk from Argentina, Canada, or Australia. It will be possible to ship in grain and to move it into the interior sections potentially in most need of it. This will help improve the lot of the urban civilian population, but will perhaps be a secondary favorable result of the opening of the Dardanelles. Since Russia has great agricultural resources of her own, improved output of which promises to contribute annually a multiple of what the maximum of imports can ever carry, she may perhaps buy from the United States agricultural equipment, such as tractors, tractor plows, combines, sowing machines, spare parts, and machine tools for the MTS and their repair shops. Such imports would speed up the recuperation of crop production in the liberated areas. As the end of military operations draws close and the relative burden of active land warfare shifts from Russia to Great Britain, Britain's dominions and smaller Allies, but principally to the United States, Russia's tractor factories may taper off tank production and begin to turn out new tractors and other machinery; just as we expect the production of heavy ordnance in the United States to fall off before

the end of the war. In autumn 1943 several Russian tank factories began to convert to agricultural machinery production, thereby assisting the spring sowing campaign in the Ukraine in 1944.

But even if a maximum volume of such means of production should be obtained by imports or increased domestic production or both, the process of recovery in the once-occupied areas must inevitably be slow. Grain production will revive first of all. In autumn 1943 the Kuban area conducted a successful sowing campaign. When the Germans invaded Russia they adjusted the entire railway system to fit the German narrow-gauge roadbeds. The Russians will have to widen the tracks, and rebuild switches, signal towers, bridges, and viaducts.

It is safe to assume that as long as the front continues to fight and the economy of the country is fully geared to war, the process of agricultural recovery will be slow. It will take livestock several years to regain its position. Nevertheless, we need not assume a further deterioration of Russia's food situation, but may foresee instead a gradual improvement. The liberated areas will have very little livestock left. A severe handicap will be the deficit in horses, because their draft power is needed, while the shortage of meat and milch animals means fewer feed requirements, at the same time involving the inability to utilize large crops of inedible fodder, and the loss of necessary manure.

On the Balkan Front

The front in the Balkans may perhaps later join with the Russian Front, since opening the Dardanelles and the port of Odessa will be one of the chief objects of this drive. To accomplish it, either the Russian Front must move westward through Rumania into Bulgaria or the western Allies must force through the mountains of Albania and Yugoslavia into Greece and Bulgaria. Although all that can be said is inevitably in the nature of conjecture, it may be anticipated that however zealously the retreating German forces try to demolish the productive plant, the total damage to agriculture in the hilly sections of the Balkans will be relatively slight. In Greece, Albania, southern Yugoslavia, and in Bulgaria, farms will suffer and cities be short of food until the new crop is ready, but it is doubtful whether large-scale permanent damage will occur.

One can predict that many horses will be requisitioned or shot and

that some oxen and other cattle will be slaughtered or driven off. Since the few poor railroads will be sorely needed for military transport, the prospect that much livestock or food staples can be removed seems rather slim. The important herds of sheep and goats have the best chance of escaping, just as they did during Spain's civil war. There, horse, cattle, and pig herds declined severely; but sheep and goat herds in any mountainous terrain are very elusive, and it never pays a hard-pressed army to go after them. And in the case of the Balkans, the hillsides are infested with guerillas, making pursuit even less worth while. Vineyards and olive trees are cultures practically immune to destruction. Wineries can be severely damaged. Demolishing farm houses will, on the whole, be just as unprofitable as chasing goats in the hills. If the battle in the Balkans should be fought along the pattern of the Tunisian campaign, it seems likely that agriculture in the zones so far discussed will perhaps lose as much in effective productive capacity as it has so far in the war. To date those losses have been incurred by regular military warfare before and during the first German and Italian campaigns leading to the occupation of the Balkans, partially as a result of partisan and guerilla warfare. All these operations demand costly requisitions of food, for partisans and guerillas on the one hand, and for punitive expropriation or ordinary requisitioning by German and satellite armies on the other.

As soon as the United Nations' front in the Balkans moves into the plains of the Danube in Rumania, and into the Danube and Tisa valleys of Hungary, much greater damage must be expected, especially in the wealthier parts of both countries, for example the Rumanian Banat. Wealthy villages with great staples of cattle, substantial numbers of pigs, and stocks of grain more centrally located invite the retreating armies to pillage and demolish, should military events permit the time and energy for it. But even if such destruction does take place, these countries will not suffer the setbacks that the farmers in the once-occupied areas of Russia experienced, because all this land will recover rather quickly, as soon as the farm population can return to the farm.

On the Italian Front

In Italy the area running a serious risk of great agricultural losses lies in the Po and the Adige valleys where heavy wheat, corn, and hay crops, dairy production, valuable cattle herds, modern creameries,

casein factories, refrigerator plants for fruits, vegetables, and eggs, and their important agricultural machinery plants are located. So far there are few indications that in the mountainous areas of Sicily and southern Italy agriculture was seriously disorganized or incapacitated in large areas. This condition can be explained by the extreme haste of the German retreat. The troops were absorbed in fighting, and fighting only. Moreover, the small-farm system and the prevalence of orchard crops confined the damage to some farm buildings.

It may be another story, however, in northern Italy where villages and small farms prevail. The retreating Germans will probably use the stone-built villages on mountain slopes for cover until destroyed, and will take away most of the livestock for their own use. As long as the Germans can keep the Allied armies south of the Etruscan Apennine mountain range, they will deny the Allies access to the Po valley. The fighting affects only the scantiest of agricultural resources and deficit areas. In fact, by abandoning the chief coal and grain deficit areas of Italy, the Germans improve the food and coal situation of the fortress. Possession of the whole boot without the rich Po bottom-lands means for the United Nations the heavy obligation of supplying vast quantities of coal and food by ship.

On the French Front

In France the German retreat may not have caused much greater damage than was incurred in the 1940 campaign when France fell. It was her good fortune that the mass flight of civilians was not repeated. Since northern France has been speedily retaken, the damage may be small, in spite of heavy bombing by the attacking forces. In this part of the country, great numbers of livestock and a great amount of arable land are located. The sections of Artois, Picardy, and Île de France are richest in wheat and sugar beets. Normandy and Brittany have the best pastures and dairy cattle. Poitou, Guienne, and Gascony are also good farming sections, deriving sufficient rainfall from the westerly Atlantic winds.

In Normandy a good deal of the high-grade cattle may have been lost in the artillery duel before the Allies broke out of the beachhead area, while in Brittany the damage may have been small. At the end of August, 1944, everything points toward a rapid retreat of the Germans, and thus to prospects of limited destruction by military

action. The greatest loss France has suffered lies in her industries, her cities, her ports, her railroads, and her merchant marine, and not in her agriculture. Like all decentralized family-farm systems operating with private initiative, French agriculture has a strong innate recuperative power. Given a chance by re-established law and order, re-organized industrial production and transportation, it will function again just as it did even under the corrupt administration of the collaborationist Vichy regime and German occupation.

Belgium and Holland

Since the Battle of France has followed the 1940 pattern in reverse, the attacking forces have gone into the Belgian and Dutch lowlands in order to sweep on into the north German plains. Seaborne invasion from England directly into Holland might accompany such a move; at least the campaign could be supported by landing troops on the Channel coast behind the United Nations front. The Belgian-Dutch area harbors Europe's most productive farms with the highest output of food per acre as well as the greatest density of population. If it should become a virtual "No Man's Land" the loss would be severe, but one of quality rather than volume, measured by the entire European output. If the Germans were to slaughter or to evacuate the cows in Holland and drive off the heavy Belgian breeds of horses, Dutch agriculture would suffer greatly. The valuable cattle staples and auxiliary industries of both countries would be exposed to destruction. Yet how much real and permanent damage would actually be incurred is open to question.

As the Anglo-American forces approach the German border, the closer defeat would loom for the German army and the less rational it would be for them to pursue a policy of laying waste the glacis in front of the fortress for a long siege. We stressed earlier the rank of the Lowlands as part and parcel of the innermost ring of the German fortress economy. In line with this notion, we doubt the deliberate wholesale evacuation and destruction of livestock and of major production assets in Belgium and Holland. However, it has been reliably reported that as a precautionary measure against invasion the Germans flooded a considerable acreage in the most fertile polder area. It is not specified whether it was done with fresh water, by stopping the drainage pumps, or with sea water, by opening the sluices. Be-

cause these operations proceeded gradually, they suggest the use of fresh water, which halts production only for as long as the land remains under water. Salt water, on the other hand, reduces crop yields for several years, and most of the best crops cannot be raised again until the salt has been leached out by rain.

While the Lowlands, as their name indicates, are that part of the fortress which offers the least natural defense to an invasion, the Germans have dumped more concrete there than in all other coastal areas combined and are set to use every house, barn, or factory as cover for infantry. The obliteration of all that this area has achieved in the history of the world's agriculture would be one of the darkest pages in the account of this war; it would be criminal not to exhaust every one of the alternatives available to the military strategy of invasion in order to avoid that tragedy.

Food Prospects for the Continent

To sum up the probable alternative developments in agriculture, and changes in the food situation in those parts of Fortress Europe that, prior to the final surrender of the German army, will have been occupied by American, British, and Russian forces:

In all these territories agriculture will have suffered losses in productivity, partly as the result of the destruction of permanent improvements on the land and of machinery and livestock; partly through the loss or inavailability of feed, fuel, fertilizer, and spare parts for implements and machinery; partly because of the evacuation or other dislocation of farm labor. These damages may be inflicted as an inevitable effect of the battles fought on land and the bombs dropped from the skies, or as the result of deliberate policy carried out by demolition squads and requisitioning commandos. Nowhere is there a prospect that agricultural production can further improve as active warfare returns to western Europe and invasion makes it a combat area. Should reconstruction of agriculture be undertaken immediately in the rear of the fronts, as we have assumed it will, production will not be restored to its remarkably good 1943-44 position for at least another two years.

On the whole, the decline in the southeast, south, and west will nowhere compare with that experienced in 1941-43 in the Russian

territories of the Ukraine and White Russia. In Norway it may remain insignificant. Nowhere will the destruction go so far that under optimal conditions of peace its full recuperation could not be accomplished in two or three years. Even in Russia it seems possible to accomplish the recovery of crop outputs within three or four years; the restoration of the cattle herd and the horse population to former numbers and weights may take at least that long—probably longer.

During the previous discussion the adjustments in production, utilization and consumption were stressed. It would be unwarranted optimism, however, to overestimate the serious strain which the shortage of fats and animal products has brought upon the European civilian population. This shortage has been shifting among areas from season to season and from year to year. It may reach its peak shortly after the cease-firing order.

The food situation in the areas to be occupied by the United Nations from the close of the 1943-44 food year (midsummer) to the end of the battles will deteriorate in so far as domestic supplies from stocks and current production are concerned. To what extent the actual rations for the urban populations shrink will depend, therefore, on the ability of the United Nations' military command, the Combined Shipping Adjustment Board, the Combined Food Board, and the United Nations Relief and Rehabilitation Administration to import food from overseas, to transport it inland, and to distribute it effectively. The aged, the invalids, and the women and children are bound to suffer, even if near-miracles should be performed on every hand. How great the import deficit will be depends upon a combination of too many unpredictable circumstances to permit any close approximation, among them the sort of relief policy under which imports are shaped. Since, contrary to the case in Russia, American and British troops on the Continent will rely for all their equipment, most of their food, munitions, and motor fuel on seaborne imports, shipping will be the great bottleneck for imports of food for European civilians. The military governments need to prevent the worst suffering; generosity will determine whether by rationing in the United States greater amounts of certain foods will be made available for relief exports but it will not determine how much food can be moved into the occupied zones. The degree of self-sufficiency in normal times, of mechanization and industrialization in each of the occupied areas will

decide the size of the deficit, and the condition of the transportation system will determine how quickly relief can be brought to areas most in need.

Since early in 1943 Greece has received some 18,000 tons of food imports per month through the International Red Cross, in Swedish ships under the control of a Swedish-Swiss committee sponsored by Turkey. In February, 1944, monthly shipments were raised. By April they had reached 34,000 tons monthly. Greece will need at least that much after she is liberated, probably more. Yugoslavia, Albania, Rumania, Bulgaria, and Hungary, which are normally food exporters, will need relatively small imports provided that food can be moved from one to the other or provided that they may be able to export to other areas as a group. The Ukraine and White Russia will also need some food, even for their farm populations.

In northern Italy and France and also in Belgium and Holland, it will again be a question of providing the cities with basic supplies for some initial months, especially if these months should fall in late spring and early summer. Special provisions will be necessary to improvise transport facilities for moving food from one area to another, particularly in France. Major needs will be those for grain for bread flour and bran for feed, lard or vegetable oil for margarine, shortening, and cooking, and oil cake for dairy cows and other livestock.

In Belgium, Holland, France, northern Italy, and Greece, much could be accomplished with 1,000,000-1,500,000 tons of grain and 300,000-400,000 tons of oilseeds, if a maximum of 18 months and a gradual expansion of the area under occupation were to be envisaged.

The needs of the liberated Russian areas can reasonably be dealt with only as a part of the contiguous area of the whole Soviet Union, which may wish to import 3,000,000-4,000,000 tons of grain as soon as the Dardanelles are open.

The longer the end of the war recedes into the future, the more advisable it would be at the outset to put the maximum effort of the United Nations' military government in occupied parts of Europe into the reconstruction of the farms and the restoration of their normal functions. There is no better way than this of saving unnecessary sacrifice for taxpayers at home, of bringing life back to normal in occupied areas, of creating employment in the small towns and in

the cities, and of saving shipping space for ordnance and munitions.

For such a policy of immediate rehabilitation under either military government or restored or elected native governments of the liberated areas, prospects should not be appraised with too much pessimism. From the distant United States it is easy to overlook one important feature of the era of nazi rule over Fortress Europe. Not from benevolent intent but from stern necessity, the German economic administration has invested heavily in agricultural improvement throughout the Continent outside the German borders. Quality breeding stock, farm machinery and tools, and high grade seed have been sent into the least advanced areas. The institutional arrangement of the agricultural markets has been reorganized along the latest American lines. Much greater improvement, however, probably has been accomplished along another line. Many millions of farm laborers and small farmers have been trained, partly in Germany, in new skills and methods of work. Many thousands of men have thus been forced to serve as tools of the efficient German administrative machinery.

There can be no doubt that when the tyranny is broken these newly acquired functional abilities will be great assets to all countries concerned and will yield their first dividends under intelligent rehabilitation by the United Nations.

Prospects Inside the Shrinking Fortress

Since the length of the war in Europe will depend a great deal on the way in which the activities of the German war economy deteriorate, and because the inner fortress ring itself will come under the administration of the United Nations, it will be well to form an opinion about the probable course of events behind the receding German Front from the summer of 1944 to the end of active war. The gradual and at least initially orderly retreat of the army will bring greater and greater pressure to bear on all the resources of the home front. While the Continent has been free of hostilities on land for three or four years, the only combat zone being the Russian Front, Germany's industrial system on the Continent will be forced to accelerate the pace of its deliveries in the 1944 phase of the war. Agriculture will immediately feel this pressure.

The civilian consumer economy has been limited so much that

it contains few if any reserves. Agriculture has been remarkably well supplied, even with the machinery directly competitive with armaments and munitions. As soon as the battle for the fronts opens up, agriculture will receive less fertilizer and machinery. Manpower may remain stable, because wherever the front is restored the army can evacuate farmers and replace them with drafted men. The fuel situation may remain as it is due to the satisfactory shift to solid fuel for most tractors and farm trucks. Animal draft power may hold out to the end, although more oxen and cows may be used to replace horses drafted by the German forces.

If the Germans lose the Balkans and Hungary, it will mean curtailments of grain supplies even beyond the loss of imports, because the German army has managed in all territories to live for the most part on the land. When there are more mouths to feed and less grain on hand, livestock will be more closely rationed. Livestock herds will be curtailed, especially pigs, but cattle herds, too, because the retreat of the armies will yield a temporary windfall of livestock requisitioned from abandoned zones. It is therefore reasonable to anticipate that the livestock within the entire German orbit will deteriorate further, while only a less serious and partial decline need be foreseen in the production of crops. The 1944 crops will not show deep effects of the military campaigns of the year, since they were sown in autumn 1943, and because during the spring sowing season the second fronts were still nascent and unable to reach deep into the fortress rings. But the 1945 crops will be the first ones to reflect the damage done by military operations.

The Continental war food economy has turned out to be almost proof against collapse. It would not be surprising if the food economy of the inner fortress ring were to continue to perform well until the day of surrender. Harvesting operations may also not suffer severely, except for potatoes or sugar beets. Administrative chaos and civil war may cause the collapse after surrender. There is a profound consolation to be derived from this state of affairs. If the food resources of Fortress Europe had actually suffered as much as the American public is tempted to believe, the greatest mass starvation ever known to history would inevitably result, and the co-ordinated efforts of all the United Nations would not suffice to mitigate that catastrophe even to a modest degree. It was the good fortune of the 345,000,000 people

inside the Fortress that agriculture and the supply system for urban areas have been braced and strengthened to such an extent and for so long that the threat of wholesale pestilence and famine, still a normal occurrence in the less developed parts of the world, has been a more remote possibility in nazi Europe.

If the German army should prefer and have enough reserves and transportation left to take a last stand inside the German borders and perhaps delay the end until summer 1945, it is possible that the fall sowing campaign will be affected and much livestock be lost, and that the food distribution system will break down for the cities. Thus, in the spring of 1945, famine may strike millions of people in urban Germany.

Revolutions: The Greatest Danger to Europe's Farms

Even under a series of military events most sparing and favorable to agriculture on the Continent, there remains one ominous possibility of wholesale devastation of farms and wanton slaughter of livestock. If, during the final phase of hostilities, the nazi machine loses its grip, and if the policing of masses of civilians in conquered territories and in Germany itself collapses, and revolutions sweep the Continent, or if this should occur after the surrender of the German armies and the termination of the Gestapo rule, much more lasting damage is bound to be inflicted upon agriculture than by all the acts of warfare combined. Revolution is an internal process of atomistic decentralization affecting productive units everywhere. It is mass action inspired by stored-up anger, bitterness, and desperation, thus, void of rational controls.

What threatens to happen once revolution destroys every semblance of order and the organized functioning of an economic system is this: Cities do not receive the food they need, perhaps only because of the damage to transportation. Rationing breaks down. Prices soar. The urban population becomes desperate, and radical agitators call them to action. Crowds of city people attempt to requisition food from the farms. Farmers resist and give battle, and soon the farmsteads go up in flames, cattle are killed, food stores plundered. If soldiers and workers join forces, the farmers are lost. The rhythm of production in their biological industry can very easily be inter-

rupted. In a few weeks the produce of a whole crop year may be lost. Slaughtering of breeding stock or burning of hay for the whole feed period is bound to throw production out of gear.

In Russia as well as in Mexico infuriated revolutionary mobs burned down and wiped out the very grain elevators, sugar factories, store-houses, which the peasants needed desperately after having taken the land from the farmer-owners.

Bloody revolution, therefore, with its chaos and senseless devastation of productive assets, is the only condition under which mass starvation becomes almost inevitable. Those who so glibly and lightly urge our military government to permit or even to engender such "blood-letting" should know that unwittingly they advocate the starvation of uncounted millions of innocent victims of tyranny, whose rescue is one of the aims of our fight.

Prospects on the United Nations Front

The foregoing speculations about the events ahead in European agriculture have much in common with walking an uncomfortably long tightrope without the aid of an umbrella. Discussion of the same question with respect to the British Empire and the Western Hemisphere is, by comparison, like walking on a broad boulevard.

Actual land combat will most likely not touch these broad zones as the war develops. Moreover, naval operations will very likely make the vital sea lanes more and more safe for merchant shipping and available tonnage, as well as its rate of annual service, will steadily improve as the war proceeds, thus creating a greater net tonnage for food shipments beyond the increasing demand for military sea transport.

Thus this economic sphere is free of the great hazards and upheavals now prevalent on the Continent, despite the fact that bombs still fall on England. In the Americas, in Africa and in Oceania, economic planning is meeting the goals reasonably well, and usually within the time fixed. Men and machines are being moved relatively freely and with sufficient accuracy to the resources from which greater yields are needed, and the goods produced are being moved with equal accuracy, notwithstanding losses and delays inflicted by submarines.

Most important of all, though, the free world of the United Nations

still holds immense reserves in research, management, labor, and physical production assets which, if need be, could be brought into play to force the final victory. The Axis has already exhausted reserves of this nature. The tyranny of the totalitarian state, by virtue of the centralized will power ruling throughout the economy, can mobilize the last reserves quickly and effectively. Constitutional forms of government have a decentralized system of motor nerves and necessarily lag far behind in co-ordinating efforts and mobilizing all resources. That is why, when the tyranny failed to overpower the democratic world quickly and before it finally hit full stride, the totalitarian forces necessarily lost the war. The nazi war economy in Europe had reached the limits of its capacity and began to culminate in summer 1943. But even in late summer 1944 the United Nations war economy was not yet at the peak of its war output, and even if this output were reduced, it would, at its peak, still have remained considerably below the capacity attainable in case of need.

In Great Britain the domestic production of food will be maintained or possibly increased. Excluding the factor of weather, some of the recently plowed land may be expected to yield better as the soil becomes adjusted to raising crops. Greater supplies of phosphate fertilizers from Algerian mines will become available as merchantmen carrying munitions to Mediterranean ports return with phosphates. In any case, and even if no further improvement should be made, British agriculture will continue to supply the people with food at a high rate. No drastic changes, but rather gradual improvements in meat production are contemplated in her livestock economy. If shipping should sufficiently ease, the British food administration would probably use this margin to return the people to a diet of whiter bread instead of the unpopular although nutritious dark war-bread made from high-extraction wheat flour. This would demand greater imports of Canadian wheat flour or wheat, or both, and would yield more wheat bran for the dairy herd. If still more shipping space were to become available, efforts would doubtless be made to import more oilseeds in order to obtain more feed concentrates for animal husbandmen. Greater imports of citrus fruit, bananas, and apples would probably rank in importance with oilseeds.

The final conquest of the Duce's late *Mare Nostrum* by the British-American navies and air forces in 1943, and the occupation of Corsica and Sicily, have made available Palestine's and Italy's oranges, North

Africa's dates, figs, and grapes, although mainly for the use of Allied armies in the Mediterranean. Better Atlantic shipping will later bring some bananas and American apples and oranges. All improvements of this nature will gradually bring the British diet back to normal, except with respect to the animal protein rations. Those will remain somewhat tight beyond the day of victory, although better overseas feed supplies began to improve those rations in 1944.

In the British dominions which, like the United Kingdom, entered their fifth year of war production in autumn 1943, the prevalent tendencies in agricultural production will hold through the duration of the European war. Prior to 1939, Canada, Australia, New Zealand, and the Union of South Africa supplied the following shares of the United Kingdom's imports: wheat, 61 per cent; bacon and ham, 25 per cent; barley, 34 per cent; butter, 46 per cent; cheese, 89 per cent; frozen beef, 70 per cent; and frozen mutton and lamb, 81 per cent. The dominions operate their food production programs and their exports in line with agreements reached under the Food Defense Plans Department prior to the war and later concluded under its successor, the British Ministry of Food. Up to Pearl Harbor, Canada held the key position almost alone, but since the start of the Pacific war the three other dominions have gained in importance. All of them will keep their agriculture timed to the war effort to the last day of hostilities.

Canada, one of the most important contributors to the food shipments for Great Britain and Russia, has increased her wheat acreage by 23 per cent in 1944, keeps wheat exports at high level, and disposes of parts of her big stocks wherever opportunity arises. If shipping should permit England to return to white bread, Canada would supply the necessary wheat or wheat flour. In autumn 1943 the Canadian government offered the government of India a gift of 100,000 tons of wheat to relieve the famine situation in Bengal. Due to the fact that wheat can be shipped from Australia to India in half the time and thus with much greater shipping economy, the Indian government did not feel that they would be able to ship the gift wheat until the situation improved.² Yet, a substantial part of the gift has eventually been received.

Wheat for relief to Greece is taken from Canadian stocks. As soon as wheat can be shipped to the Continent and to Russia in larger

² Broomhall's *Corn Trade News*, LIII, No. 45, November 17, 1943, p. 442.

volume, Canada will be the first of the prospective sources of such shipments particularly in view of the bumper crop harvested in 1944. In the meantime the policy of stressing the output of animal products, particularly pork and dairy products, and of feed grains and hay will be continued. During the year ending September 30, 1943, Canada furnished Great Britain with 675,000,000 pounds of bacon, or four times the 1938 deliveries. This required a record crop of 7.5 million hogs in one year. In the next two years this record may be broken. In the year ending March 31, 1943, shipments of 125,000,000 pounds of cheese, 60 per cent more than the prewar average, were contracted.³ War prosperity will endure for Canada's farmers at least as long as the European war lasts, but probably beyond. This dominion is, fortunately for her, located more closely to the British Isles than any other food exporting area save Ireland, and has a first mortgage on the food market in the mother country.

Australia's distance from England is the farthest of all dominions and colonies. Wherever bulky foods can be obtained for the United Kingdom from nearby sources, those are preferred as long as bottoms are scarce. And this situation will persist until shipping decisively improves. On the other hand, the Pacific war has substantially made up for Australia's loss of the major part of her European outlets. As England and North Ireland are the home base of large American forces, so Australia is the operational base for Australian and American forces in the Southwest Pacific. As air, land, and sea warfare against Japanese island position gains momentum, more and more food from Australian farms will be needed. Many new industries have sprung up, resulting in full employment. The use of processed foods for domestic consumption has increased. All these factors have increased the demand for food to such an extent that many consumption restrictions have been imposed.

Grain deficits in India or the requirements for Anglo-American forces working themselves into the Andaman Islands and the Dutch East Indies will also most easily be supplied from Australia's large wheat stocks. Aside from such outlets for wheat, the answer to the difficult shipping situation must, of course, be to convert as much wheat as possible into animal products, and to produce other bulky

³ Montell Ogden and Maurice Wright, "Contributions of the British Dominions to the United Nations Food Supply," U. S. Dept. Agri., *Foreign Agriculture*, March 1943, p. 57.

food such as potatoes and green-leaf vegetables for the Anglo-American forces in order to save imports. This policy will persist. The 1943 wheat crop is estimated at 96,000,000 bushels, compared with 158,000,000 for the preceding year. A few data may indicate the importance of various items. The food supplied to United States servicemen under reciprocal lend-lease by Australia to the end of June, 1943, consisted of the following items (long tons):⁴

Meat	27,446.4	Bread, Biscuits, Cereals	21,477.7
Butter	2,967.8	Potatoes	13,286.6
Condensed Milk	3,888.8	Vegetables and Fruit	22,290.6
Fresh Milk	5,133.9	Canned Foods	12,651.7
Fresh Eggs	14,732.1	Sugar	5,259.8

One of Australia's specific and outstanding agricultural contributions to the war economy of the United Nations has been in the field of fibers. In prewar years more than a third (i. e., 351,000 tons) of the world's 922,000 tons of wool exports came from Australia, and another 102,000 tons from New Zealand. During the war Great Britain and the United States have been the sole purchasers of the Australian-New Zealand clip. In the United States this supply has made possible the avoidance of rationed woolen clothing, although more rayon and cotton go into woolen goods than in peacetime. For the huge British and American armies, and possibly for the Russian army, the availability of wool from these dominions and from South Africa is an invaluable convenience. To Australia, on the other hand, this effective war demand means prosperity for the sheep farmer. In 1942-43 the value of wool shipments amounted to more than 40 per cent of Australian exports. During four war seasons the British government has purchased from Australia 14,400,000 bales of wool for £260,000,000.⁵ It may be taken for granted that an equally high wool clip will be sold in years to come, since the price is profitable and the demand guaranteed.

Australia will want more phosphate fertilizers for crops. If Nauru should be taken from the Japanese, the fertilizer shortage would soon be overcome. Nitrogen fertilizer is received from Chile.

⁴ Howard Daniel and Minnie Belle, "Australia and Lend Lease," *Far Eastern Survey*, December 8, 1943, p. 234.

⁵ *Commercial Intelligence Journal*, LXIX, No. 2028, November 27, 1943, p. 436.

Shortages of agricultural machinery will probably be met by the release of such material from the United States. Shortages of manpower, brought about by increased industrial production and the military draft, has plagued Australia's farms from the inception of the war, but production is not likely to be seriously impeded. Women have been introduced to farm work in large numbers, and farm people work longer hours, which helps to make ends meet.

As the war moves into its sixth year the reduction in submarine losses and the truly stupendous output of merchant ships in American shipyards will become the dominant factors for agriculture in Australia and New Zealand. As the route from England through the Mediterranean and the Suez Canal to western Australian ports begins to move a greater volume of goods, certain adjustments in production may take place. It is too risky, however, to attempt to outline the changes to be expected from the end of the European war to the end of the Pacific war. Chapter VI will demonstrate that the potential scope of the demand for food exports to Great Britain, Continental Europe, and Russia may require a thorough reorganization of the entire supply system, and a reallocation of certain sources in line with the new merchant shipping situation, the movement of the navies, land and air forces into different theaters of war, and other factors. When Europe's market for overseas food is open, and military forces are accumulated in the Pacific, much greater emphasis may be put on Australia's and New Zealand's food-producing capacity. These two areas may thus have an opportunity to expand agricultural production.

South Africa, the fourth of the dominions, has had more merchant vessels passing its ports than Australia and New Zealand since the beginning of the war. The Empire's lifeline through the Mediterranean was cut by the German-Italian navies and air forces, thus forcing all the ocean traffic between England, Canada, and the United States on the one hand, and the eastern Mediterranean, the Near East, the Persian Gulf, India, the Malay States, and Australia-New Zealand on the other, to take the long detour around the Cape of Good Hope. More provisions for Europeans in various parts of Africa, prisoners of war, convoys, and troop transports had to be supplied. Tight shipping as well as difficulties in supplying the domestic market with foods no longer imported kept the supplies of food to Great Britain scarce. South Africa's most outstanding contribution to the

British war economy is the whole exportable portion of the wool clip, which in 1938 amounted to 109,000 long tons; in coming years this export will continue. Assuming that South Africa received the same price as Australia for its wool, the value of 100,000 tons in 1943 would have amounted to £12,000,000, or \$48,360,000.

In 1939 the Union exported £3.4 million worth of maize and maize meal, £1.9 million worth of sugar, £1.5 million worth of oranges, and £400,000 worth of grapes. Drought and greater domestic need for meat and dairy products and resulting requirements for more feed, as well as greater domestic demand for cereals because rice imports were cut off, have made corn unavailable for export. Moreover, the Union has been forced to import more wheat than in prewar years, and has received it from Argentina. Other than wool, South Africa exports to Great Britain substantial amounts of eggs, dried fruit, fruit pulp, jam, oranges, butter, cheese, and canned crawfish.⁶ For the coming years great efforts will no doubt be made to expand or at least maintain the production of cereals for the domestic market. Greater imports of fertilizer and farm implements will be required, and these may gradually become more easily available. There will be no difficulty in shipping export sugar. With reference to eggs and fruit, greater use of dehydration may be anticipated. In general, South Africa will have a greater market at home and abroad than her relatively slim agricultural resources, struggling with depletion of soil fertility, erosion, and exploiting measures, can possibly supply. High prices and many supporting public measures will keep South African agriculture in a favorable position at least to the end of the European war.

Prospects for the United States

No great change in United States agricultural policies seems likely until the end of the European war so far as the broad aspects of the physical volume of output are concerned. Simply because that output is so huge, what happens in the next two years on the 6,000,000 or 7,000,000 farms in the United States is of utmost importance to the food realm of the United Nations. The greatest hazard still is drought.

⁶ Ogden and Wright, *op. cit.*, p. 60; *Commercial Intelligence Journal*, LXVII, No. 2029, December 19, 1942, pp. 553, 557-558; *ibid.*, LXVIII, No. 2047, April 24, 1943, p. 332.

Little can be done about it but to maintain reserves for civilians with due caution, and to guide and control utilization and consumption with greatest care by means of a maximum outlay for production. If large-scale drought should strike, and strike perhaps in two years in succession, drastic measures by the War Food Administration and the Office of Price Administration would be inevitable. Such measures would involve a curtailment of hog, poultry, and egg production, and of fattening beef on corn and other grain, heavier consumption of cereals in the form of bread and breakfast foods, a greater utilization of skim milk for food, and the importation of more food and feed, particularly from Canada and South America. Serious drought would not only reduce crops of wheat, corn, and hay, but also the important soybean harvest, which yields two-thirds of the cake and meal and one-third of the edible oil tonnage. The loss of soybean oil added to a reduced amount of lard and tallow would necessitate greater economy in the use of fats and oils generally.

The drought of 1934 resulted in a corn crop of 1.5 billion bushels from an acreage larger than in 1933 when a crop of 2.4 billion bushels was harvested. It also resulted in a decline in the number of cattle from 74,000,000 to 68,000,000, and a decline of 69,000,000 to 46,000,000 hogs in a single year. The lard supply fell from 2 billion pounds in 1934 to 1.3 billion in 1935. These few data may indicate the nature of changes which can take place under the influence of unfavorable weather. Centralized planning of production and utilization of all food supplies, and the co-ordinated management of domestic allotments, exports, and import stocks considerably reduce the potential impact of such natural disasters. Vested with extraordinary powers and in command of one of the world's most advanced administrative machines for a planned agricultural economy, the United States War Food Administration should be able to cope effectively with that emergency if and when it should arise, and cushion the shock by all-round adjustments of nearly every item in the national food balance sheet.

Since there was no drought in 1944, no drastic changes in the policies of food production and distribution in the United States need be expected. But it should be noted that although the corn and wheat crops are exceptionally large, less feed will be available in 1944-45 than in the two preceding years, because the large carry-over accumulated from 1937 to 1941 has been exhausted. In 1944-45 the in-

evitable and desirable downward adjustment in hog production is being made. Lower hog prices and higher corn prices have exerted so much pressure upon hog farmers that they have reduced the "pig crop" beyond the goal desired in view of the feed supply. Thereby a larger supply of feed grain per animal unit is in prospect for 1944-45. This additional slaughter will mean a temporary increase in meat supplies. With storage facilities filled to capacity, this increased supply of fresh meat has led to a remarkable temporary relaxation of the restrictions imposed upon civilian consumption. Such relative abundance of meat and lard will naturally lead to a tightening of civilian rations afterward. The curtailment of the grain-consuming meat animals will set free more grain and millfeed for dairy cows. Reduced prices for hogs and beef cattle, and maintained or raised prices for milk will give the dairy farmer's dollar a sufficiently better purchasing power to buy grain and millfeed for maintaining or improving the milk output. On the whole, it must be considered an achievement if American milk production manages not to lapse far below the 1940-43 level. Shortage of skilled personnel is the most serious handicap to further expansion.

The total of 364,000,000 acres put into crops in 1943 was boosted beyond 380,000,000 acres in 1944 as the State Goal Meetings of November, 1943, pledged. The food resources of the United States and the British Empire are to a considerable extent pooled, at least in the actual planning of procurement by and for the government at home and abroad of imports and exports and the disposal of stocks. Many changes in the proportions of specific commodities may therefore be expected in production and processing goals whenever the reopening of foreign sources make American exports unnecessary or whenever new requirements call for adjustments. As more ships become available, more American fresh fruits may be wanted in Great Britain, and for the liberated areas of the Continent more dried, canned and fresh fruit may be needed. As shipping cases and more feed is needed, it may become advisable to import more sugar from Hawaii, Cuba, and Puerto Rico, and to reduce the vastly expanded American sugar-beet acreage for the sake of other crops. As much or even more pulpwood and cordwood for fuel will be hewn from the country's forests and wood lots as was removed in 1943.

As more and more of the 13,000,000 people in uniform are transferred to the theaters of war and other stations outside the continental

United States, heavier demands on food supplies for the armed forces may be anticipated, especially if the present practice of feeding a part of the population in occupied areas from army stores should be continued and expanded. Lend-lease requirements may also increase; and beyond that, new requirements for UNRRA will become urgent. Yet it would be a serious mistake to expect that all or even the major part of these increased demands must be supplied by American agriculture. Too often this error slips into the thinking even of planning committees in Washington. It is neither in the national interest of winning the war at the earliest possible moment with the least sacrifice in lives, nor is it wise from a purely agricultural standpoint to strive to utilize to the last dollar the theoretical opportunity to produce on American soil the maximum of all food and fiber that is needed. (It has been estimated by British economists that in 1943-44 only 10 per cent of the food movement on the seven seas originated in the United States.)

Should that be attempted, the job of adjusting agriculture to post-war conditions would become much more unmanageable. The inevitable claim to more manpower, more implements, fertilizer, and transportation would create serious delays and bottlenecks in vital war industries, and aside from that, other predominantly agricultural areas of the world would be deprived of their fair share in war production work.

For the duration, America's farmers will enjoy the exceptionally favorable price relations which have so far given them an undreamed-of income prosperity. As the price level has risen, they have felt their debt burdens lift also. Moreover, they pay off those debts ahead of amortization schedules. The political as well as the economic constellations which were responsible for the seven fat years (1937-44) after the seven lean ones (1930-36) will probably hold until the war ends in Europe. Toward the end of the European war a better supply of farm machinery and fertilizer may be anticipated as ordnance production tapers off.

Prospects in South American Agriculture

While the broad outlines of future wartime developments in North America's agriculture can fairly well be foreseen, it is not so easy to forecast the same trends for South America. The changes in gov-

ernment by military *coups d'état* in Argentina and Bolivia have illustrated that the political situation is far from stable and predictable. The persisting tension in the diplomatic relations between the United States and Argentina may or may not increasingly affect Argentina's foreign trade in agricultural products, especially in view of the ever-increasing control over the world's merchant marine by the United States and Great Britain. The fact that during the United Nations Conference on Food and Nutrition held in Hot Springs, Virginia, in August, 1943, Argentina, one of the world's leading food exporters, was not represented, more than ever emphasizes the political uncertainties involved.

Brazil is a belligerent member of the United Nations, and America's most valuable military ally and neighbor in the South American republics. She is perhaps politically assured against developments detrimental to her agriculture. The market for coffee, Brazil's chief export commodity, promises to expand as ocean transportation becomes more readily available, as more Mediterranean countries revive their import business, and as the liberated Continent begins to express its yearning for real coffee in purchases.

The United States has steadily increased its coffee consumption for 30 years, and continued to do so in the war years. In 1913, 6.5 million bags were imported. The five-year average of 1934-38 showed imports of 13,000,000 bags. In 1939 and 1940 a total of 15.1 and 15.4 million bags were imported. In 1941 and 1942 imports exceeded 17,000,000 bags annually. The Inter-American Coffee Quota Agreement,⁷ granting each of the Central and South American exporting countries a quota in the United States market and the high military and civilian demand for coffee, are sufficient safeguard against any serious deterioration of the coffee export situation. The creation of a Brazilian National Coffee Department will protect good prices during the war years. If the Balkans gain access to overseas trade, and once France, Belgium, and Holland are liberated, a considerable additional demand for coffee will become active.

In other fields, Brazil's farmers have fairly good prospects, too. The market for cocoa which used to contribute some 4 per cent to the export value is still active and will probably absorb all that Brazil has to sell. As long as China's tung oil is inaccessible, i. e., probably

⁷ V. D. Wickizer, *The World Coffee Economy, with Special Reference to Control Schemes* (Stanford University, 1943), p. 10.

beyond the termination of the European war, oiticica and castor oil, both drying oils used in place of tung oil, will be produced, in view of a strong American demand and highly profitable prices. Cottonseed oil will have a good demand. Cotton has the best chance of continuing to be Brazil's second most important export commodity. Thus the cotton textile industry will continue to expand and to absorb an increasing volume of cotton fiber. Exports of canned meat and of skins and hides should continue at fairly high levels and at good prices. One of Brazil's most promising developments for agriculture should be the further expansion of the textile, rubber goods, steel, paper, pulp, and glass industries because they create purchasing power in the hands of increasing numbers of urban consumers. Many of the new plants were still under construction in 1943, among them the Volta Redonda iron and steel plant, which has a planned capacity of 300,000 metric tons of finished iron and steel products, and plans to begin production in 1944.

As the domestic food market widens, imports of wheat from Argentina will increase, while Argentina, in turn, will become a still better market for Brazilian textile goods and fruits such as oranges and bananas.

We may almost omit the question of the future of the rubber industry because in Brazil rubber is not an agricultural product but almost exclusively material collected from wild trees in the jungle. The plantation industry is little more than a costly and so far unpromising experiment.⁸ The Ford concessions, Belterra and Fordlandia, will begin commercial production in 1944 and 1945. To the end of the European war the two plantations will produce perhaps not more than 1,000 tons and because of insurmountable difficulties will never amount to much. Belterra is expected to reach full capacity in 1948 with a production of some 6,000 tons. Fordlandia is supposed to reach 500 tons by 1950.⁹ The total yield of the collections in the Amazon basin under the Inter-American Rubber Agreements of 1942 will range in 1944 from 35-50,000 tons. The Rubber Development Corporation is obliged to purchase all rubber offered until December 31, 1946, at the exceptionally favorable prices stipulated in the

⁸ K. E. Knorr, *Rubber After the War* (Food Research Institute, War-Peace Pamphlets 4, Stanford University, Calif.) February 1944, pp. 39-44.

⁹ L. S. Glass, "Economic Conditions in Brazil in 1941," *Commercial Intelligence Journal*, LXVII, No. 2013, October 10, 1942, p. 333.

agreements with Brazil and 14 other Central and South American states.¹⁰

In spring 1944 the Rubber Development Corporation abandoned its own program for the Amazon valley, but entered into an agreement with the Brazilian government which leaves all activities to the latter. The United States at the same time agreed on February 9, 1944, to pay up to March 31, 1945, a price of 60¢ per pound of rubber shipped from Brazil, instead of the former price of 45¢ under the original agreement of 1942.

Continuation of the collection and sale to the United States is thus assured. It is doubtful whether the former peak of production in tropical America, which reached 62,000 tons in 1912, will be reached or bettered before the end of the European war; yet it is safe to assume that the main volume of business under the agreements will be done in the years 1944-46. Its chief importance lies in the secondary benefits derived from it, i. e., the establishment of a large number of airports in the most inaccessible parts of the Amazon basin, and certain improvements in communication and services there.

Argentina and Uruguay may find a widening foreign demand for some of their agricultural produce in spite of Argentina's persistent unwillingness to yield in her foreign policy to pressure from the United States. This prospect exists economically because in the final phase of the European war, demand for some products Argentina can readily supply may become urgent, either under the auspices of UNRRA or by direct procurement orders from Russian or other governments. It exists politically because the American interest in Argentina's foreign policy will diminish as the nazi regime and Japan approach their military doom. Such commodities may include vegetable fats, meat, cheese, condensed milk, oil cake, as well as wheat and corn. Such opportunities should materialize, especially if Argentina's department of agriculture uses good judgment on the further course of the war and adjusts agricultural production sufficiently in advance to the anticipated needs of some potential foreign customers. The greatest assurance of its well-being in the hands of Argentine agriculture and thereby the country as a whole is Great Britain's need for Argentine meat, her interest in the country's market for industrial goods, and her interest in the earnings of heavy invest-

¹⁰ E. G. Holt, "The Inter-American Rubber Agreements," *Arbitration in Action*, April-May 1943, pp. 17-18.

ments in loans to this Latin American republic, notwithstanding Argentina's present substantial credit balance against England. The lively development of inter-Latin-American trade and trade with South America is another favorable aspect for Argentine agriculture. If any country in the world is equipped to supply wheat, corn, meat, dairy products, oilseeds, vegetable oils, and oil cake at low prices, that country is Argentina, which has a vast reserve capacity for producing much more at the same if not lower costs. The country's tendency to use its earnings in foreign trade for greater domestic industrialization makes a materially satisfactory trade relation so much the more tempting for England, a highly industrialized export country that buys so large a percentage of its food from abroad.

In Mexico, Central America, Colombia, and Venezuela, the agricultural situation will probably drift in a direction similar to that in Brazil, except that these countries enjoy the advantage of being closer to the United States. Coffee and rubber are taken care of by the respective Inter-American Quota Agreements. In sugar, the civilian consumption of which is restricted in the United States, and will probably be for the duration, the situation should visibly improve as soon as enough ocean cargo ships become available. The foreign market ought to improve in volume with the maintenance of good prices. The export of bananas will be handicapped as long as the European war lasts. The technical requirements of ocean and land transportation and the maturing and holding of the fruit all speak against the relaxation of the war restrictions. However, when the war ends in Europe and foreign trade with the blockaded Continent is resumed, the banana export is likely to revive.

Prospects in Asiatic Agriculture

Surveying briefly the prospective developments in Asia in the coming years, in India and China on the one hand, and in Japan and Japanese-occupied areas on the other, the least change may be expected in China. As the United States increases military support, particularly in the air, and if the Burma Road should be reopened, China may be able to defeat Japan's stabs at her rice bowl. Those thrusts will endanger the very existence of free China as long as they last. If large Japanese-held areas of China should be liberated, they would congest the functions of her food economy, but as usual in

view of the poor inner communications, these conditions would be localized. Since farming is carried on mainly by hand, scorched earth can be restored to production within a very short time. The main risk lies as always in underdeveloped countries in natural calamities such as drought, floods, and pests; yet even these are always regional. The full incorporation of China into the trade of the free world will probably be a part of the very last phase of the war against Japan. Even when Japan's navy has been decisively beaten, it is possible that the powerful and well-equipped Japanese army will continue to fight in the conquered parts of China. Only when the army has been crushed on the Asiatic mainland will the great seaports and navigable rivers become accessible to the seaborne international trade. Only then can China think of importing food on a larger scale. Whether she will make use of such future opportunities in substantial volume remains to be seen. The greater probability lies in large purchases of equipment for permanent improvements on the land.

India, however, has been for the most part spared the ravages of war on her shores and cities. She belongs to the great fighting arsenal of the United Nations. The rise of industrial activity will continue, probably long after the end of the European war. It is conceivable that on account of her proximity to the theater of war she may see a continuation of hostilities long after the European war is over; but India's industries will probably continue to produce military equipment and ammunition, while the United States' and Great Britain's industries are gradually being shifted to peacetime civilian production. India's agriculture will benefit in coming years from the ready domestic market. Cotton, tea, and sugar should profit most from the war in the years ahead. The abnormally low imports of cotton goods and additional exports to Great Britain have stimulated the domestic textile mill business so much that two and even three shifts a day have been adopted.¹¹ The opening of the Empire lifeline through the Mediterranean, and improvements in shipping service will probably strengthen again the export of oilseeds and jute, and the importation of wheat from Australia. If and when Burma and Indo-China can be wrested from Japan, India will have better access to the exportable rice surplus there.

The great change the war brings to India lies definitely in the

¹¹ Paul Sykes, "Business Conditions in India in 1942," *Commercial Intelligence Journal*, LXVIII, No. 2039, February 27, 1943, pp. 167-168.

astounding progress of her steel and steel-manufacturing industries, in the large expansion of the generation of hydroelectric power, in the rise of paper and cement industries, and in the general expansion of a great variety of consumer-goods industries.

In Japan proper, agriculture will not only be kept up until the navy has surrendered or is sunk, but probably will be intensified in the latter phase of the war. The more the fisheries are hampered by the drafting of men and boats for military service, and the more difficult it becomes to move stores of rice, beans, sugar, and other foods from distant conquered areas to home ports, the more emphasis will be laid on an expansion of domestic agriculture. Such expansion by further intensification is not impossible, particularly not if rising costs are met by public subsidies.

What will happen in the outlying regions of the conquered Empire necessarily depends on the further course of military events and the duration of the war against Japan. If the Dutch East Indies should be liberated first and the Malay States next, the estate economies of those regions would suffer less in their productivity than if they should be occupied to the end of the war. In any case, the deterioration will most affect the estates managed by Europeans and least the entire native food economy, including rice, cassava, and vegetable production, as well as rubber and coconut collection. The longer the areas that produce crops for export remain under Japanese occupation, and the more the Japanese merchant marine deteriorates, the more these areas will drift toward self-sufficiency in food and the curtailment of the output of export commodities. The proportions between the acreage cultivated by the natives and the large plantations suggests that this change is natural in view of the disappearance of the main market for the crops of the latter. In the Dutch East Indies, for example, 7,000,000 or 8,000,000 hectares are used for the crop of the natives, while only 1 or 1.2 million hectares carry plantation culture, 60 per cent of which are Hevea and rubber trees. The rate of loss of invested capital through neglect or abandonment varies naturally with the sort of crops and the time involved. Rubber plantations may not lose trees so much as they will suffer by loss of buildings, transport facilities, equipment, and personnel. The reclamation of coffee and tea plantations, on the other hand, may cost almost as much as laying them out anew. Sugar-cane fields may lose all utility except for the land, which can be plowed up and replanted.

The fields may become infested because of the absence of disease control. If Java should unexpectedly be liberated from Japanese occupation late in 1944, the rehabilitation of its plantation economy within two years would not be too difficult.

In British Malaya, where rubber and *Elaeis* oil palm plantations abound, prospects are good for repairing the damage within a relatively short period. The Philippine Islands should be in a still more favorable position as cane sugar, coconuts, and manila hemp and tobacco predominate in her export trade.

In concluding the bird's-eye picture of the probable developments in the world's agriculture to the end of the war, we see that the prospects differ greatly as to areas, and that even within the same areas previous trends need not continue up to the end of hostilities in Europe, and even less so from then to the termination of the war against Japan. We have indicated the risk of serious deterioration of the agricultural plant inside the nazi fortress, but have anticipated under the most favorable course of military events the possibility of much less damage than that wrought in the once German-occupied areas of Soviet Russia. For Russia a gradual but slow recovery of farming in the blighted areas was assumed, while for the rest of the world a continuation of favorable or even boom conditions or an improvement in the situation was anticipated. Japan and China and the Japanese-conquered territories may expect relative stability within the peasant economies, but certain decline in the colonial estate economy.

Unsatisfactory as this discussion must be to the reader who, expecting prediction, has found only large spots of darker or brighter hue, it has nevertheless served one good purpose. It has shown that the task of reconstructing agriculture is far from simple, and is gigantic in scope. Reconstruction must be, as we hope the present and preceding chapters have shown, immeasurably different from and more than the arrangement of farm relief on a world-wide scale. In fact, in great sections of the world farmers are doing a better business than they have for the last 25 years, even in large areas of Europe. There are, at the same time, millions of farm people who have lost homes, livestock, and implements, their farms, and even their lives in eastern Europe, and in parts of China. In some parts of the world food and feed are used for fuel for locomotives and combustion engines in place of coal, gasoline, and diesel oil because the food and feed cannot be shipped out or the mineral fuels shipped in. Farmers in some areas are anxious

to produce more and will, if only they can get rid of their foods, feed, and fibers; in others, they cannot produce enough in spite of a lively demand and exorbitant prices, because the war has deprived them of the chief means of production.

One concluding observation should be emphasized again: neither Hitler nor Tojo and their gangs will lose their war because they run short of food. They will lose their war precisely as the Central Powers lost World War I, by a crushing military defeat in battle. Difficulties in obtaining food supplies will contribute their share of pouring grains of sand into the totalitarian machine, along with many other economic difficulties with respect to raw material, manpower, and transportation.

Food will not win the war, as an embarrassing American watchword for the farmers has asserted. Food will not win the war by absence or shortage on the Axis side, nor by its relative abundance on the side of the United Nations. As we have seen, a most critical food situation has developed not on the side of the aggressors, but in Russia and China, and starvation has struck not only in Greece but on a much larger scale in Bengal. A report by the intelligence service of the American army made public by Representative G. E. Outland of California on December 12, 1943, stressed the relative strength of the German army at the close of 1943, and mentioned as one of the pillars of that strength the food situation. It pointed out that at the beginning of her fifth year of war, Germany's food rations were higher in caloric content than they were when war began.

The popular Anglo-American illusion about the supposedly inevitable general and drastic deterioration of agricultural production and the resultant presence of famine everywhere is fed by the faulty judgment of many experts in agriculture and food. In actual fact, agriculture in general, and family farming in particular, are sufficiently decentralized to ward off deep aggregate effects of bombing on many millions of scattered farms. The sum total of agricultural resources behind the blockade and the sum total of people to be fed inside it is of such magnitude that adjustments in production, utilization, and human consumption close the gap created when imports are cut off by blockade. Since nearly half of all the grain and potato calories harvested in Europe are normally fed to animals, and since nine-tenths of it is lost that way for the household of human food energy, the maintenance of smaller herds and less feeding and rationed

distribution of animal products in the diet are powerful and effective correctives. The administrative machinery of the totalitarian government has forced its adoption. After its defeat, it will yet be wise for the succeeding public authorities to enforce such economy until abundance can be restored with the aid of foreign trade.

While there remain many risks of declining agricultural output and of famine until and after shooting ceases, the greater probabilities lie in the direction of a moderate debility of agriculture in the worst of the war-blighted areas of the earth, and a need for relief of proportions which are manageable in view of the world's available supplies.

CHAPTER VI

Food Requirements and Agricultural Adjustments Necessary during the Demobilization Period

AFTER having tried to form a considered opinion about the situation that will probably prevail in world agriculture when war ends, we must estimate in a similar way the prospective developments in markets for food and fibers, carefully considering the adaptation of farm production to the changed demand. The course of events in the final phase of the struggle cannot be predicted, nor can the circumstances which will determine the specific demand for food or supplies available in certain areas, the disposal of war stocks, or the conditions for exchange of food. Yet to achieve our ultimate purpose, we must attempt to gauge critically the range of probabilities.

As long as the German army rules the Continental fortress and its 350,000,000 people, and the Japanese hold the major part of their conquest on the Asiatic mainland and in Malaysia, the food world will continue to be blocked off into several tight compartments. The chief features of this segmentation are these: the deficit of the European continent cannot be satisfied from overseas; the supplies from Malaysia (which includes the Dutch East Indies) and Manchuria are smothered at the source; China remains secluded; and for as long as the Dardanelles are closed, even Russia will have difficulty in importing sizable overseas supplies. The situation will change only when the military grip of the Axis on the two continents is completely broken.

In order to grasp the nature of the change during the demobilization period with respect to food and agriculture, we must assume that the decisive battles will have been won by the United Nations. If they are not, little of the panorama unfolded in Chapter IV would change. In that remote, though theoretically not impossible case, tendencies toward increased production within the deficit areas and

of gradual shrinkage of output in the marketless surplus areas would in time establish some sort of equilibrium.

But the assumption of decisive Allied victories brings us face to face with a deep structural change, enhanced by the speed with which territory will be taken. For convenience, we will consider first a total Allied victory in Europe; second, a total Allied victory in Asia.

The most pertinent questions are: (a) what will be the requirements of food relief after the liberation of Europe? (b) what, if any, are the supplies available for satisfying these requirements in part or in full? (c) by what machinery or procedures will the supplies move from their present location to their ultimate relief destination? (d) how will agriculture in the countries that supply the relief stocks thus be affected? (e) how will agriculture be affected in the deficit areas that receive imports on relief accounts?

These few questions may suffice for the moment to indicate the impressive scope of this problem of appraisal. So strategic is its nature that many national and international boards and their expert staffs have been wrestling with the problem ever since the first months of 1943.

Interpretations of "Need" and "Requirement" in Relation to Food

No one can reasonably question the existence of a pressing demand for more and better food in many European countries inside the fortress. If no evidence be admitted save the demonstrated desire of large masses of poor people to have better food more than anything else, and to pay dearly to get even a little of it, the case for an urgent demand is airtight. Despite the impressive crop production record of European agriculture under the disturbed conditions of war, all European nations with the exception of Portugal, and most recently Spain, yearn for more edible fats, more meat, more eggs, more milk, better bread, more sugar, and more cake. They all want more tea, coffee, cocoa, chocolate, and more alcoholic beverages, and ahead of all food, more good soap. However indisputable this basic question, grave doubt begins to arise as soon as one attempts to define concepts of "need" and "requirement" in order to make quantitative estimates. Indeed, the problematic nature of this question arouses wide differences of opinion among realistic experts.

As soon as desirable medical standards of nutrition are introduced into these considerations, requirements of food imports for Europe become impossible of estimation. The nutritional status and actual diet of the European nations in the best peace years have differed widely with wealth, domestic habitat, nutritional knowledge, and taboos on food. Some of the nations reached a state where all the people lived all the time on diets adequate to meet health and work requirements, although even in those instances the desires of delectation were never satisfied except for a very few. In some countries many people lived on a deficient diet even in normal times; and in every country some people suffered from the effects of overeating, malnutrition, and dietary abuses. In industrial countries, most food calories were derived from foodstuffs other than cereals and potatoes, while in the poorer agricultural countries the ratio of such calories from starchy foods rose up to 75 or even 80 per cent.¹

In view of such a motley historical pattern of national diets, and noting realistically the narrow limitations for concerted action by even the most powerful nations, it is utopian to approach the question of European relief requirements from blueprinted standards of nutrition. What one can do in that direction is to attempt to construct national balance sheets with a certain composition of the supplies necessary to meet the estimated caloric requirements for a given population according to age groups, sex, type of work, and other social indicators. Yet even if fairly good demographic data are available, difficulties arise as soon as an attempt is made to calculate existing domestic supplies. Unfortunately, only a very few countries, most noteworthy among them being Great Britain, Germany, and Japan, have advanced their statistical knowledge of food intake and food supply sufficiently to make such calculations feasible. Naturally it is of no help when the margin of error in the calculation by far exceeds the normal food deficit covered by imports.

The only approach to a practical compromise on the definition of "requirement" is to proceed from the habitual annual food consumption in normal times and the food imports during such periods. Such recent historical data can be interpolated on account of known changes in factors which alter the physiological need of calories or the composition and quality of food. The acceptance of such em-

¹ M. K. Bennett, "Wheat in National Diets," *Wheat Studies* (Food Research Institute, Stanford University, October 1941), XVIII, 49-58.

pirical data leaves just as much leeway for a generous supplementation of supplies with more protective foodstuffs as would a procedure which begins with optimum medical standards of nutrition.

Prewar and Wartime Estimates of Food Requirements

In prewar years (1934-38), Continental Europe obtained from overseas, as M. K. Bennett has shown,² roughly 20,000,000 metric tons of food and feed—7-8,000,000 tons of food and 12-13,000,000 tons of feed. The British Isles absorbed during the same prewar period roughly 20,000,000 tons of overseas food and feed with the difference that these imports were composed of the reciprocal proportions, i. e., 12-13,000,000 tons of food and 7-8,000,000 tons of feed. The British imports included at least 2.3 million tons of animal products, while the Continent was on a net exporting basis for these commodities, but purchased more feed. As a result, the value of the 20,000,000 tons of food and feed for Great Britain was substantially higher than that of the 20,000,000 tons of food and feed purchased by the Continent.

It is well to remember this difference when plans for the postwar supply of the Continent are discussed. The Continent has not grown more wealthy during the war and will need every possible opportunity to economize. To import feed concentrates as a supplement to domestic feedstuffs with too low concentrations of nutrients is a far thriftier procedure than to order butter and cheese and eggs, and pork and beef, ready-made from overseas.

From these global figures, based on a very intricate analysis of foreign trade statistics by the Food Research Institute, we can derive at least one important measuring rod for the future overseas import requirements of Europe. If the Continent should return to its full prewar annual transoceanic inshipment of food and feed, 20,000,000 tons more or less of food and feed would be involved. And if the British Isles should also return to their full prewar rate of imports, it would mean another 20,000,000 tons of food and feed purchases in Asia, Africa, Oceania, and the Americas.

To appraise the magnitude of the change compared with the 1943-

² M. K. Bennett, *Food for Postwar Europe: How Much and What?* (Food Research Institute, War-Peace Pamphlets 5, Stanford University, Calif.) March 1944, p. 13.

44 rate of ocean-going food movements, a few other global data will be helpful. There is good reason to believe that in 1943-44 the British Isles received around 10,000,000 metric tons (mostly food and very little feed) from overseas, or only half the prewar aggregate of food and feed imports. The four neutrals, Sweden, Switzerland, Portugal, and Spain, whose imports normally amounted to about 2,000,000 metric tons of food and feed, in 1943-44 received hardly more than 1,000,000 tons under British navigation certificates or "navicerts" and German safe-conduct agreements. In the summer of 1944 Greece was the only Axis-occupied member state of the United Nations receiving overseas food. Under the auspices of the International Red Cross, 34,000 tons of food, 15,000 tons of it Canadian gift wheat, are shipped in Swedish boats to Greek ports. Thus an annual total of as much as a quarter of a million tons will be received. Southern Italy, Sicily, Corsica, and Sardinia, the first liberated areas of our recently acquired cobelligerent, Italy, also receive overseas food supplies. These shipments may amount to an annual total of perhaps half a million tons.

Total Continental receipts excluding Russia are therefore at present below 2,000,000 tons per annum. Russia, formerly a net exporter of 1.5 million tons of all varieties of food and feed except rice, coffee, tea, and cocoa, received around 2.5 million tons of food (no feed) in 1943-44, mostly on lend-lease account.

The combined receipts of overseas food and feed imports for the British Isles, the Continent, and Russia, do not much exceed 15,000,000 tons, as compared with 40,000,000 tons in prewar years. Yet as this book goes to press, the fifth year of war is approaching its last quarter, and there is little evidence that shortage or lack of food is responsible for the crumbling military resistance of the Axis or their cobelligerents. The 25,000,000 tons of food and feed which greater Europe and Great Britain no longer receive are being compensated by adjustments in utilization and consumption, and by adjusted primary production. Excluding the Russian problem, the disparity between the Continent's prewar imports and actual receipts during the fifth war year amount to 18,000,000 tons. The chief means of getting along without them is, as has been stressed before, by reducing the number of animals fed. Since the livestock herd will not be suddenly increased, and since a part of the high per capita rations now reserved for the armed forces of the Axis will become available to more civilians, there is no valid reason why the Continent should need as much

for relief as the full prewar import rate, unless the events leading to liberation and their aftermath should increase the requirements.

In speaking of "relief" we ignore categorically all plans to apply dietary reforms to emergency situations in foreign nations, but instead adhere strictly to the principle that the food situation shall be maintained at or restored to an endurable level compared with prewar levels of caloric intake and composition.

Factors to Consider in Computing Relief Needs

To arrive at useful estimates, several contingencies must be considered. After the brisk battle on the beaches the defenders of the fortress did not immediately surrender and throw the entire Continent open at once for military occupation or the restoration of indigenous governments. In fact, even if the *blitzkrieg-in-reverse* in France should lead to German surrender, the process of occupying Europe would proceed gradually and piecemeal, occupying forces converging from several fronts toward the center.

As soon as the various new sovereign administrations—military and civilian—take over, country by country, the previous economic unity of Fortress Europe will cease to function. This disruption of the flow of goods in a system of communicating vessels may immediately create a need for greater overseas imports than would otherwise exist. Normally some 5,000,000 metric tons of food and feed moved from the southeastern part of Europe into the northwestern and central regions. How much food has been flowing through the veins of intra-Continental trade under the nazi regime is not known. All evidence points to a very substantial exchange throughout the Continent by means of a network of numerous trade agreements crisscrossing the whole area. Naturally, this great economic asset to Europe can be inherited by the United Nations and their member-states only if a solution can be found for continuing the functional economic unity of Europe. Sadly enough, all the evidence points in the opposite direction.

If military government should take over parts of Europe only while the enemy continues to fight, the dismemberment of the communicating food economy will be inevitable. If, on the other hand, the major part of Europe should be liberated and the military govern-

ment divided regionally under several commands, great ingenuity and powerful co-ordinating efforts will be needed in order to escape the corollaries of military command the world over: the insistence of exclusive territorial sovereignty by each commander. To express it more explicitly, a military governor of Hungary and Rumania who finds great stocks of grain and an oversized livestock herd may consider these assets as legitimate insurance against shortages under his rule in his area, and may be very reluctant to release them, to say nothing of offering them spontaneously to the military governor of Belgium or Greece. Even a supreme joint command will find it most difficult to eliminate the red tape and secure quick, intelligent, and co-operative action in the field for the sake of combined United Nations relief efforts.

To add to the probable complications that reality will present, we must envisage a variety of forms of government. If Norway should be abandoned by the Germans or stormed by the Allies, nothing would be more natural than to turn the administration of the country over to the Norwegian king and his government-in-exile or a newly elected government. Theoretically, the United Nations military and national civilian governments may try to utilize all European food resources under a combined board. In practice it will, to say the least, be most difficult to attain by way of consultation and liaison the dispatch and co-ordinated action that is germane to the administration of a military high command or a political dictator. All the frictions that develop in moving specific food and feed commodities from surplus to deficit areas inside the Continent always create additional shortages beyond the ones existing under German occupation.

Let us assume, however, that all these more or less administrative reasons for increased relief requirements will be kept within the narrowest limits. There still remain enough others, and most of them defy attack by intelligent co-ordination or pooling of food resources. Disarmament of Axis forces, movement of soldiers to camps or their homes, transfer of Allied occupational forces, and the enforcement of the multitude of security measures against the flaring up of hostilities or against general revolution all will strain the transportation system to its utmost. The supply of coal for the railroads, of gasoline and diesel oil for trucks, and of lubricants for both depend in themselves upon the satisfactory operation of the transportation system.

As the German rule is abolished, and when German currency is considered collapsed and inflation runs riot, strikes and insurrection will sweep the Continent and upset transportation in general and handicap the proper functioning of the food distribution system. Price chaos, mismanaged currency stabilization measures by the liberating or occupying powers, or simply mass distrust of such measures by the people, inevitably produce food hoarding on farms and the general stagnation of the flow of food from farm to city and from dealer to consumer. Though a general strike by farmers against selling is unlikely, the prospect of a slowdown of the velocity and a shrinkage of the volume of food shipments from the country to the city involves a grave calamity for the urban population. Aside from relatively ineffective threats, punishment and policing, the principal measures against such hoarding which the newly established authorities will have at their disposal include the shipping in and unloading of overseas foodstuffs in the markets, and the bartering of goods needed by farmers in exchange for what they produce.

Indeed, of all the adversities the liberators of the European nations must face, uncontrolled inflation, hoarding, and black-marketing are the worst in their effects, and the hardest to combat at their source. The same conditions which protect Europe's agricultural production from sweeping destruction or sudden deterioration are also responsible for the inability to coerce the farmers by brute force alone into acceding to central plans when the price and money situation frightens them. We saw that in planning for production, income incentive alone will move millions of farmers in the right direction. That is even more true when it comes to inducing them to part quickly with much of their output. If price chaos should occur, and owing to a combination of unfortunate circumstances should defy swift remedial action, or if destructive price conditions should be created by incompetent manipulation (as was committed by the catastrophic depreciation of the Italian lira by the Allied Military Government in southern Italy), a rapid increase in urgent requirements of food relief is inevitable. Thus to any calculation of requirements a substantial volume beyond the real deficit must be added in order to create a sufficient cushion of supplies for at least the initial period. How large a cushion it must be can be determined only by considering the technical opportunities for moving food to the shores of the territory to be occupied, as well as from the shores inland.

Relief Requirements for Europe after the War

There is no dearth of estimates of relief food requirements. They vary from almost astronomical ones down to very modest guesses, in terms of total tonnage as well as composition and costs.

Continental Europe.—The summary of overseas requirements submitted to the Office of Foreign Relief and Rehabilitation Operations by the European Allied countries and calculated by the Leith-Ross Committee as of May, 1943, gave the following data in thousand metric tons for the first six months after liberation: *

Country	Foodstuff	Oilseeds,	
		Fats and Oils	Feedstuff
Belgo-Luxemburg	807	113	352
Czechoslovakia	659	140	14
France	1,334	432	289
Greece	919	31	50
Netherlands	762	118	367
Norway	337	33	83
Poland	1,705	121	23
Yugoslavia	804	87	—
Total import requirements from all sources, needing shipment	7,332	1,076	1,177

These estimated 9.6 million metric tons would mean shipments at an annual rate of more than 19,000,000 tons, unless the Committee considered heavier imports during the initial six months than in subsequent periods. Considering that these requirements exclude the neutrals, the five Baltic states, Finland, Estonia, Latvia, Lithuania, and Germany, Austria, and Italy, the requirements seem unduly high. The three Axis countries alone imported from overseas 7,000,000 tons of food and feed, or more than one-third what the Continent imported in prewar years. The same Leith-Ross Committee estimate comprised no less than 36,000,000 metric tons of other materials needed from overseas during the first six months for the eight countries alone.

The National Planning Association has published the most conservative estimate of food relief needs for the first year for most of Continental Europe—one of 8.5–9 million tons. Compared with pres-

* Data supplied by Food for Freedom, Inc., by letter of March 24, 1944.

ent imports of less than 2,000,000 tons, and the prewar imports of 12-13,000,000 tons (food only), the estimate seems to be very reasonable, provided that hoarding does not go the limit and that some order can be restored. Our chief criticism would be of the assumption that one can import food only and avoid shipping any feed. We even doubt the possibility of preventing heavier feeding of animals no matter whether managed with imported or domestic feedstuffs.

The National Planning Association mentions a few of the basic items to be included in relief shipments which supposedly guarantee a "diet floor" of 2,000 calories a day, "below which no European diet should fall." These items are: ⁴

Grain	5-5.5 million tons
Beans and Peas	.3 million tons
Sugar	.4 million tons
Meat, Fish, Cheese	.8 million tons
Fats and Oils	.5 million tons
Dry Skim Milk	.1 million tons
Total	<hr/> 7.1-7.6 million tons

Other estimates lie somewhere between the high of the Leith-Ross Committee and the low of the National Planning Association. John H. Richter, whom we have cited before, published an estimate in April, 1943,⁵ which included 17,000,000 tons of food for Continental Europe excluding Russia providing the effort were made to restore the consumption of food to the prewar level of caloric intake. However the author doubted that the effort could be made immediately. In March, 1944, M. K. Bennett ⁶ published his estimate of Continental food and feed requirements; he concluded with a cautious summary of 15-18,000,000 tons. We are inclined to consider this estimate somewhat high, but confess that all depends on what assumptions are made about the conditions which will have to be met after liberation. Civil strife and disorder may create much greater need and reduce the possibilities of distributing relief.

⁴ National Planning Association, *Food for Europe After Victory* (Planning Pamphlet No. 29, Washington, D. C.) January 1944, pp. 20, 41-42.

⁵ John H. Richter, "Continental Europe's Wartime Food Balance," *Foreign Agriculture* (U. S. Dept. Agri., Office of Foreign Agricultural Relations), April 1943, VII, 85-96.

⁶ M. K. Bennett, *Food for Postwar Europe: How Much and What?* (Food Research Institute, War-Peace Pamphlets 5, Stanford University, Calif.) March 1944, p. 93.

Russia.—With respect to Russia, there are many unknown items in the equation, although not quite as many as for the Continent. Unquestionably there is a very substantial "need" for imports of food, if one uses prewar per capita consumption of specific groups of food-stuffs such as fats and meat as a measuring rod. That the main route of seaborne imports through the Dardanelles and Odessa will be open when victory is won seems equally certain. One reason for uncertainty as to the order of magnitude of imports lies in the unpredictability of the policy the 16 independent Soviet republics will adopt, to whom the sovereignty of foreign trade has been granted by the transformation of the All-Union People's Commissariat of Foreign Affairs into a Union-Republican People's Commissariat.⁷ It may be taken for granted that Russia's import and export policy will be uniform no matter by what process of deliberation uniformity is attained. While the 1943-44 rate of imports has been around 2.5 million metric tons, it seems reasonable to expect large imports after the termination of hostilities. However, it would be surprising if the main emphasis were not laid upon rehabilitation of agriculture from domestic resources, and if imports were reserved chiefly for industrial machinery and other factory equipment. Central planning has overcome the greatest national hardships in times past. It will probably be employed to strengthen the productive capacity rather than to improve the diet of the people quickly.

Russia's imports during the initial year of the coming peace may be twice what they were in 1943-44 or a little higher, i. e., 5-6,000,000 tons rather than 10, 15, or 20,000,000. It will make a great difference whether Russia can incorporate a considerable part of the Danubian basin, Poland, and the three Baltic states into her food orbit for some time. Even much more depends on the success with which grain and sugar production is restored in the Ukraine, the Donetz, and other devastated areas.

Great Britain.—Great Britain's share in the relief shipments can be measured more closely. Imports in 1943-44 were only half those of prewar years (10,000,000 tons instead of 20,000,000). The 10,000,000 tons represent a considerably higher caloric value than in normal years because they are chiefly foods; concentrated animal products

⁷ Carnegie Endowment for International Peace, *International Conciliation*, March 1944, No. 398, pp. 238-242.

and dehydrated food constitute a large proportion of the total. Since domestic production has been boosted and the diet adjusted, there is little need for returning at once to the prewar level of imports. A return to white bread and improvement in meat, egg, bacon and fruit rations seem to be the chief improvements the people desire. If imports should rise in the first year of peace from 10 to 15,000,000 tons, the British diet will probably advance to the prewar status, and perhaps pass it.

If we assume, then, that during the first year after victory, Great Britain will import 15,000,000 tons, the Continent all told, 15,000,000 tons (excluding United Nations occupation armies), and Russia 5,000,000, the ocean-borne overseas food and feed trade will have to carry 35-38,000,000 tons instead of 14-15,000,000 tons (1943-44). We must, of course, inquire whether such imports are available in the proper composition. Fortunately, such requirements can be covered without much exertion and without bringing grave discomfort to the people in the countries which will have to supply a major part of the exports. The assumption that the food and feed in the quantitative limits stated will be available is based on the presupposition of great economy and unflinching husbandry in selecting the most suitable commodities. The chief foodstuff must be wheat, sugar, dry beans and peas, salt fish, fat pork, skim milk powder and condensed milk, cheese, and fats. The chief feedstuff must be corn, barley, soybeans, and oilseed cake or meal.

Prospects for European and Overseas Agriculture in the Relief Period

For a period of one or perhaps two or even three years, farmers in overseas countries may enjoy a continued lively demand for their products in the export market. To what extent this demand will support favorable prices of specific commodities will depend on the supply situation in the world market as well as the demand in the domestic market, including military procurement as it tapers off. When hostilities end in Europe and freedom of the seas is restored, many supply areas which we have cut off from European markets will begin to move once more, while the extremely high per capita purchases of food for the military forces will gradually decline. At the same time, oversized stock will be reduced. If these trends should

coincide with a continued expansion of food production in all the exporting countries, a sudden price collapse for certain commodities may very probably take place. The interplay of economic factors which finds its expression in the single-handed movement of the price on the dial is much more complex than this inference may imply. The relief policy itself will have a profound effect upon this developing tension between demand and supply. It makes a great difference whether food relief consists merely of moving certain food stocks overseas to suffering consumers in European cities or whether a major part of all efforts will be directed from the outset toward the rehabilitation of European animal husbandry and the restoration of the fertilizer and farm machinery supply for Europe's farms.

It is difficult to overlook the fact that a controversy of interest exists between European and overseas farmers just as real as the one between farmers in the Argentine and the United States. Europe's farmers are by tradition the world's most efficient animal husbandmen. What could be more natural than that they should want to obtain the major share of the business during the relief period? If one can improve the feed ration of dairy cows for which good roughage is plentiful by adding imported oil cake, the increase in milk yield would begin to show up within a few days—particularly if the concentrates be fed to the cows that are in best lactation and are the best converters of feed. Danish farmers raise a litter of eight pigs per sow in six months to slaughter weight. Since sows are pregnant for five months, a large crop of bacon and pork can be expected within a year after feed grain imports begin. If the Continent receives 10,000,000 tons of grain imports in one year, and can maintain its grain and potato output, eggs and poultry meat will begin to become more abundant within six or eight months.

Hence the question that all the farmers in Europe will pose just as eagerly as will their competitors in the United States, Canada, Argentina, Australia, New Zealand, and elsewhere, is: What is going to be purchased for relief? Will it be "finished products" for the most part, such as wheat flour, sugar, meat, lard, dried milk and eggs, or will the major portion consist of oilseeds, oil cake, grain, and tankage? Since the decision is a matter of policy still not determined by the powers concerned, it cannot be answered, but it leads to another group of questions which lend themselves to at least some tentative answers. These questions deal with the delegation of powers by the

victorious United Nations to administrative bodies responsible for adjudicating, organizing, and executing the shipment of relief supplies to Europe. Who makes the decisions, by what procedure, and which of the many considerations are given priority, inevitably must affect the final policy.

United Nations Activities in Behalf of Relief

Soon after the war slashed into Norway, Poland, Holland, Belgium, and France, national committees for relief of these countries were organized. Organizations for the relief of civilians in Yugoslavia and Greece followed. All of them have their headquarters in the United States and have received the great bulk of their financial support here. An enduring monument to the practical humanitarian ideas of a substantial part of the American public is the fact that throughout the emotional disturbance inherent in fighting a total war, the idea of bringing relief to the innocent victims of modern warfare has been upheld, regardless of where the victims are and the stage of military combat being waged. Mr. Herbert Hoover has headed this movement and has been its most articulate and influential protagonist.

Foundation of UNRRA.—While military necessity frustrated these efforts, with the exception of some feeding in Vichy-French territory before German occupation and in Greece, the United Nations have adopted a policy envisaging the use of their great economic and managerial resources for a full-fledged relief and rehabilitation campaign after liberation. After the initial step of creating the Office of Foreign Relief and Rehabilitation Operations in the State Department, the United States took the lead in the efforts that finally resulted in founding the United Nations Relief and Rehabilitation Administration (UNRRA).³ This international agency has its top headquarters in Washington and secondary headquarters in London. Both offices are under the management of three deputy directors-general, the director-general residing in Washington. The United States, Great Britain, Russia, and China are prominently represented in the personnel of the director-general's office.

As its members, UNRRA has the signatory governments or au-

³ Bulletin of the Commission to Study the Organization of Peace, *United Nations Relief and Rehabilitation* (1943), VIII, 1-3.

thorities, and is governed by a Council composed of one representative for each member. The Council determines its own rules of procedure, votes by simple majority unless otherwise provided for, and acts as the policy-making body of the administration. The executive authority of the administration is vested in the director-general, who is appointed by the Council on the nomination by unanimous vote by the Central Committee consisting of the representatives of China, the Union of Soviet Socialist Republics, the United Kingdom, and the United States of America. The director-general presides in the Central Committee without vote, and is responsible for organization, personnel policy, and action. The Council establishes such standing committees as it considers desirable in addition to those incorporated in the agreement. The latter consist, among others, of the Committee of the Council for Europe and the Committee of the Council for the Far East, as well as a Committee on Organization and Administration, a Committee on General Policy, a Committee on Relief and Rehabilitation Policies, and a Committee on Finance and Supplies.

The unoccupied signatories to the agreement are pledged to contribute to a total operational fund of 2.3 billion American dollars a sum equivalent to 1 per cent of their 1942-43 national incomes. The United States share, the largest, of 1.3 billion dollars, has been voted by the Congress, but for actual purchases all funds must be made available by special appropriation. On May 3, 1944, President Roosevelt made the initial request for funds to set UNRRA in motion, asking the Congress for \$450,000,000 in cash, and for authority to transfer \$350,000,000 worth of supplies, services, and funds available through lend lease. Once it is made, this \$800,000,000 appropriation will represent an advance on the United States pledge of 1.3 billion dollars to UNRRA.

The gross value of relief operations during World War I and after the armistice amounted to 2.1 billion dollars all told.⁹ At first glance the UNRRA allotment may appear to be inadequate because of the greater scope of need. The 2.3 billion dollar fund, however, is a revolving fund. All the revenues derived from sales of relief and rehabilitation materials may be used over and over again. It seems certain that many countries will pay for a large part of what they receive in goods through UNRRA. It seems not unduly optimistic to

⁹ League of Nations, Economic, Financial and Transit Department, *Relief Deliveries and Relief Loans 1919-1923* (Geneva, 1943), p. 7.

assume that the aggregate total purchasing power may thus amount to \$5,000,000,000 or even more. At the same time it must not be overlooked that UNRRA has to allocate its funds to considerably more than food and food services only. Under its relief policies it is bound to provide food, fuel, clothing, shelter, and medical supplies, and to assist in restoring health and welfare to people in distress, and in the repatriation of dislocated peoples. Under its rehabilitation policy it must provide for the restoration of public utilities and services, and supply materials for the restoration of agricultural production and of fisheries. All these activities will absorb funds, and only a part of the total financial resources can be used for buying, shipping, and distributing food.

Aside from this flexibility, there is provision also that the Red Cross and the numerous, and in their total capacity powerful, voluntary organizations whose chief pursuits are the execution of relief and rehabilitation, will operate with their own resources and personnel with the consent of the director-general of UNRRA. At the first conference of the Council, held in Atlantic City November 10 to December 2, 1943, no less than 57 voluntary relief organizations sought a hearing. Although they could not be heard at that time, the director-general, Herbert H. Lehman, assured them that they would all have an opportunity to go to work.

Relief Measures Antecedent to UNRRA.—In the meantime, doubt has arisen about the nature as well as the date of earliest action by UNRRA. It is considered as a definite military decision that the Anglo-American armed forces will be responsible not only for relief measures during the actual course of military operations, but also for supplying all the relief and construction requirements during the initial six months after invasion and occupation.¹⁰

UNRRA can begin its area operations only upon the invitation of the military commanders who must determine by their own judgment when it will be safe, and from a military standpoint expedient, to turn over handling relief to the international relief agency. This does not exclude the possibility of requesting the director-general to begin shipping in relief prior to the expiration of the six months. Most of the plans of UNRRA have been shifted, however, to supply relief during the first year following the first six months after suc-

¹⁰ *New York Times*, February 24, 1944, p. 11.

cessful invasion or surrender of the Axis forces. This change in the prospective calendar of activities means, of course, considerably more than a mere postponement of the beginning of operations. It may well affect the scope of requirements as well as the nature of operations. It also involves favorable as well as disadvantageous administrative conditions. There is more time for adequate preparation and planning, more time for accumulating stocks, while the indefinite length of the period of preparation will tend to keep the most energetic and competent men on UNRRA's staff chafing for action, and may even tend to cause them to drift away from UNRRA.

The Probable Range of UNRRA's Activities.—To return to the pertinent question of the volume of food and feed to be distributed by UNRRA, we must try to grasp the effect of the transfer of the initial assignment to the armed forces. It stands to reason that the first six months may precipitate the most urgent need for relief. This will certainly be so if occupation should begin around the end of the calendar year for then the end of the crop year, when even under normal conditions stocks are lowest, would have to be covered. In that case the armed forces would, under their own auspices and presumably also under their own financial power, move in all the supplies considered necessary to the establishment of order behind the front and to the maintenance of the life and health of their civilian charges.

The armed forces, American as well as British, with their exhaustive economic intelligence services and their very efficient services of supply must necessarily have assumed the responsibility of procuring all the supplies they consider necessary in the worst eventuality, namely, that they cannot invite UNRRA to begin operations until the expiration of the first half-year.

If the armed forces solve the most urgent relief problems during the most critical period by virtue of their own resources—and many military considerations speak in favor of such a course—it may simply mean that UNRRA funds will stretch much further than if UNRRA alone had to feed civilians and had to feed them from the day of invasion on. How large the requirements of food to be handled through UNRRA will be, or for how long a period the share in the fund of 2.3 billion dollars allocated to food will last, cannot be predicted. The price level of all relief goods, the military and political situation on

the Continent, the size and composition of Europe's crops, the reconstruction of livestock herds, and the volume of industrial employment are but a few of the unpredictables.

It should be sufficient, therefore, to state that an international agency with substantial financial resources, adequate administrative machinery and adequate time for preparing its action, has been organized to acquire, transport, and distribute food and any other relief materials to the occupied nations after their liberation, either free or for payment, according to its discretion.

It is not yet clear whether this agency will also be empowered to relieve the populations of former enemy countries or their allies or cobelligerents from desperate shortages of food and medical supplies. At the time of this writing it seems to be understood that UNRRA food will not go to the enemy countries. However, we foresee that food relief must and will be extended to the populations of the vanquished nations, too—if for no other reason than the danger to the occupation forces as well as to all other nations that will accrue if famine strikes and relief is refused. Disease and pestilence do not halt at the barriers marking political boundaries. It will be necessary and expedient for reasons of military security alone not to create chaos and misery or to permit it to develop by refusing to reopen the natural channels of trade. Morally it seems equally impossible to indulge in unscrupulous nazi policies and thereby betray the ideals for which the United Nations are fighting.

President Roosevelt, in his message to the Congress recommending legislation in behalf of UNRRA¹¹ as well as UNRRA's director-general and several of his deputies have repeatedly stated that it will be UNRRA's main endeavor to help the nations help themselves. Secretary Hull and Mr. Lehman have emphatically stated that UNRRA will neither use food as a political weapon, nor discriminate as to race, nationality, or creed. *Need* will be the only criterion.

This draws very definite lines of demarcation, but by no means indicates the nature of the actual operations of UNRRA. How far UNRRA will go in distributing relief to various countries with its own personnel will depend on the degree of sovereignty vested in the authorities ruling there, as well as other military and political circumstances. During the first session of the Council at Atlantic City in November and December, 1943, detailed resolutions were

¹¹ *New York Times*, November 16, 1943, p. 12.

adopted which laid down the policy concerning the scope of activities and the relationships with the military command and with the intergovernmental agencies.

The Functions of Restored National Governments

For France, Belgium, Luxemburg, Holland, Denmark, and Norway one may anticipate that as soon as liberation is accomplished newly elected national governments will take over, after a brief interim bridged by the repatriated governments-in-exile. Since we are more interested in grasping the nature of the relief transactions than in speculations about specific countries, we may omit from the discussion for the time being the more intricate cases of Poland, Yugoslavia, and Italy, not to mention the obscure situation with respect to the three Baltic states.

For the six previously mentioned countries, it may be said that all of them will have a natural and avowed desire to purchase the major part of the relief materials needed; if possible, all of it. They want to do so for reasons by no means dictated only by the desire to restore prestige or to avoid incurring political or moral obligations. The purchase of materials in the foreign market is an act of foreign trade which inevitably involves reciprocal transactions of payment. These may consist of the disposal of funds held abroad or in contracting certain services such as shipping, insuring, banking, or accommodating foreign travelers, or in exporting goods. Any one of these transactions is part and parcel a policy of re-establishing commercial intercourse with the outside world. This, however, is the most vital need of all these nations, outweighing in importance the temporary need of emergency supplies in the period of transition from war to peace.

Thus, buying such materials for relief and rehabilitation will be the first constructive act of the new national governments. To take relief as a gift means inevitably to forego such opportunity. Instead of starting up a circulating flow of goods, services, and capital and linking a country to the stream of international life, gifts mean that a country receives merely a one-way traffic of goods, and its ports become a dead end. No literate European adult is so ignorant as to be unaware of the abc's of international relations, for they are simple truths applicable to nations and individuals alike. The idea of giving relief goods as outright charity, and to renounce any claim to pay-

ment, has been strongly endorsed by those Americans who consider foreign trade a foreign entanglement and injurious to the independence of the nation. Gifts involve no reciprocation other than gratitude. Gifts are better than goods paid by loans if repayment of the loans is made too difficult. Yet the fact that gifts deny the much more vital right to trade and of access to raw materials is well known in Europe. It is no wonder, therefore, that the most important European nations are not enthusiastic about a gift policy, or that on the same ground they will refuse to co-operate in a policy which gives them enough to keep from dying, but too little to live.

Some of these nations have considerable means with which to initiate a policy of buying instead of taking international charity. France is in the fortunate position of being a fighting ally with a large part of the French Colonial Empire at her disposal, especially North Africa, which Frenchmen proudly call "*La France d'Afrique*." Morocco, Algeria, and Tunisia have been connected with the flow of trade in the free world since their liberation, and in an amazingly short period have become rehabilitated. Their exportable food products are, so far as circumstances permit, stored for export to France when parts of it have become free. France holds funds in the United States which amounted to 1.4 billion dollars in 1942, and which in due time will be unfrozen. It is not impossible that with the revival of exports from North Africa and the other French African territories new balances of free foreign exchange will gradually accrue. Thus liberated France will almost immediately be in a fairly strong trading position. What she will do with it remains to be seen.

If the Netherlands East Indies were not in Japan's control, the Dutch government would find itself in an even better position than France. It is not impossible that parts of the Japanese-held Dutch East Indies will become liberated earlier than any of the other conquered areas in the Pacific. Even without Java, Holland is strong as a buyer of relief. Her total available funds amount to 1.8 billion dollars, of which some part may be used for relief purchases.

Denmark's foreign funds will also be substantial, probably held for the most part in Sweden. Belgium and Norway are known to have potentially at their disposal at least \$400,000,000 and \$100,000,000 respectively tied up in American banks.

As soon as the initial period of exclusive military government comes to an end, these nations will insist upon buying what they themselves

determine they will need and want to obtain from the outside. Being liberated and free they will naturally want to have a voice not only as to the origin, quantity, price, and quality of each commodity they will buy, but also with reference to its transportation and methods of payment.

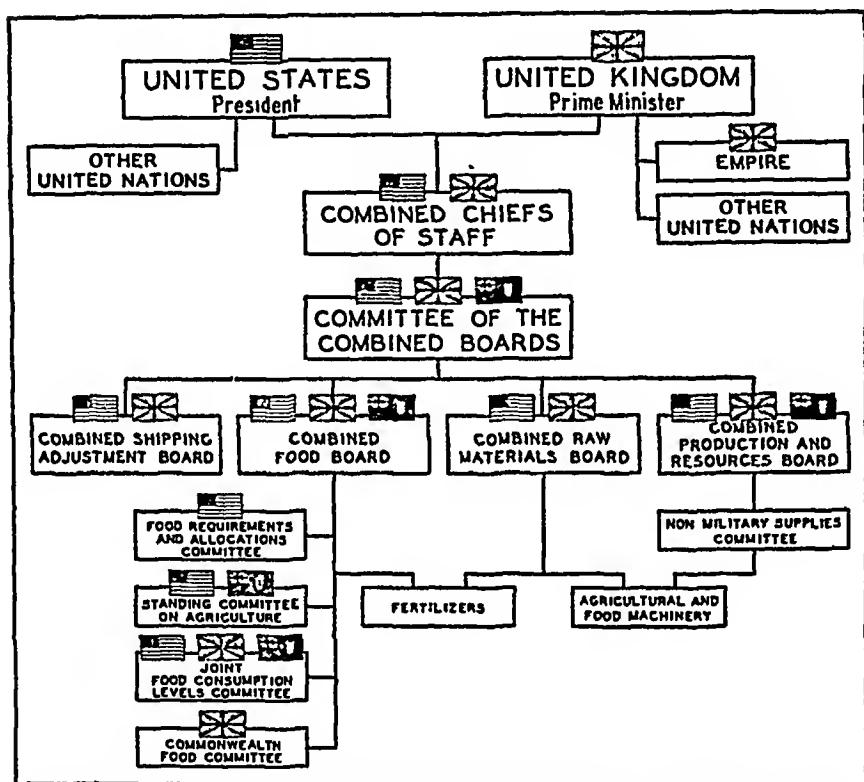
The free nations who can pay for their needs are under no obligation to buy through UNRRA. All they have to do as signatories of the UNRRA agreements is to inform the director-general of their actions and consult with him in advance. However, while this leaves the most solvent free nations at liberty to buy as much food as they see fit and obliged without the services of UNRRA, there is ample safeguard against a general scramble for food in the world market for a long while after the liberation of the first few countries. It is obvious that competitive bidding for available food supplies and shipping facilities would not only throw the regulated flow of materials into confusion, but would also upset the carefully steered price level of such materials as well as the planned utilization of transportation resources of all nations, and would do immeasurable harm to the recipients, the sellers, and all other parties concerned. It would create shortages of materials and services all around.

The safeguards against such disorder lie not in UNRRA, but in the Allied Combined Boards, which constitute a powerful super-government over Allied resources. The organizational diagram in Chart VIII shows that part of the most comprehensive system of combined boards concerns the utilization, acquisition, storage, transportation, and distribution of agricultural means of production, food, feed, and fibers.

It has been estimated that in 1944 about 95 per cent of all the critical raw materials and 97 per cent of the shipping resources, outside of Axis-controlled territory, were allocated and controlled through the Combined Boards. Naturally this very effective international supervision and planning system will not be abolished or substantially relaxed during the period of demobilization. Hence, liberated nations will be obliged to clear any purchase and shipment of food, feed, fiber, or agricultural production materials through the Combined Boards. This will be the case even for the transfer of materials from the liberated colonial possessions, though not *de lege* or *de jure*, but *de facto* in a political sense. The control of shipping alone would suffice to enforce collaboration. As the illuminating frictions between the United States and Great Britain on the one side and De

CHART VIII

ALLIED CONTROL OF RAW MATERIALS, FOODSTUFFS AND SHIPPING *



* Chart derived from data in *Business Week*, January 29, 1944, pp. 55-80.

Gaule's French Committee of Liberation forebode, it would of course be a bad start for the coming peace to bring strong economic pressure to bear upon members of the United Nations as long as there is either sufficient leeway for attaining the same results by diplomatic means, or the possibility of compromising on minor issues. Obviously, intelligently guided self-interest and mutual aid, rather than dictation by the Great Powers, must be the basis of all such arrangements.

UNRRA and the Restoration of Foreign Trade

Nevertheless, the nature of the functions of UNRRA may perhaps turn out to be essentially different from what they were thought to be during the conference in Atlantic City or in the hearings before the Congress.

UNRRA will undoubtedly be called into certain countries to carry out the same sort of program as the one executed by its forerunner, the United States Department of State's Office of Foreign Relief and Rehabilitation Operations. The latter conducted the short but successful relief campaign in Tunisia with lend-lease funds. It seems likely that a major part of UNRRA's functions will be those of an agency which in providing for relief and rehabilitation will inevitably be forced to prime the pump of foreign trade for formerly occupied member states. In the Balkans, UNRRA might either assist volunteer organizations or the International Red Cross in beginning to supply relief, or it might put its own campaign of feeding and rehabilitation to work. In France and the northern countries UNRRA will probably have a much better opportunity, by assisting the liberated nations in obtaining the supplies they need through its resources. Such activity will be involved and meshed with the economic phase of foreign policy, and the realm of international diplomacy, however, far more than is the handing out of relief as a gift.

Those who would rather distribute gifts than become involved in international diplomacy because they fear that America could not hold her own in the arena of international negotiations are guilty of defeatist thinking. So narrow a concept of national opportunity within a family of nations ill becomes a great power.

To illustrate a hypothetical instance of UNRRA's role as a pilot agency in the revival of foreign trade, let us suppose that three months after liberation the Allied military commander of an area in Norway turns over the civil administration of the country to a newly elected Norwegian government. The cabinet decides to import wheat, sugar, dry beans and peas, cheese, dry milk, and pork. It finds that it can obtain the wheat and cheese at the lowest price and on the most convenient terms of payment from Argentina, and sugar from Cuba for the same reasons. Dried beans and peas are found to be available in Hungary and Rumania. Dry milk and pork supplies would have

to come from supplies held by UNRRA, for no others would be found available.

Therefore, the government in Norway might apply for UNRRA's consent and the Combined Food Board's permission for the free purchase of the needed amount of Argentine wheat and cheese and of Cuban sugar, and for the sale of the required amount of pork and dry milk from UNRRA stocks. Payment to Argentina might be made partly by shipping service in Norwegian bottoms rendered for Argentine orders, partly in pound sterling paid in London banks from Norwegian sales of Antarctic whale oil to the British fats trade. The Hungarian bill for peas and beans could be balanced by exports of wood pulp and certain ores. The debit on UNRRA accounts could be paid in United States dollars unfrozen in New York banks. Before this alternative would be chosen, however, every other one available would be diligently tried out. Norway might try to create a sufficient credit balance with UNRRA by delivering on UNRRA account frozen and salt fish and nitrogen fertilizer to Poland, Czechoslovakia, or Belgium, or cod-liver oil for UNRRA's medical stock piles.

This much simplified example no more than scratches the surface of the very complex matter of the resumption of international trade and the need of bringing it back on a sound business basis. It gives only a very modest foretaste of the real business that will develop between nations under the auspices of their own co-operative agency charged with the responsibility of channeling food and other relief goods and services to the neediest spots in orderly fashion. Any allocation of supplies as well as any clearance of free purchases will involve many more moves than those indicated in this example. Since great economy in utilizing available shipping space will be just as imperative as during the war, the composition of cargoes alone will require a great deal of efficient administrative work, even although more ships will then be traveling the trade routes.

Overseas Sources of Relief Stocks for Europe

From the shipping angle as well as that of meeting the most basic needs, the crucial point will be what supplies are available where. With narrow limits existing for exportable supplies inside Europe and the prospect of a serious deterioration of much Continental transportation and trade, the great bulk of relief materials must be moved

from overseas. Exportable overseas surpluses even set the limit to the satisfaction of the demand for relief shipments.

The greatest available stock consists of wheat. From the 1944-45 wheat crop and the stocks carried over from earlier years, 20-27,000,000 tons may be available. In all likelihood actual supply will come close to 25,000,000 tons, particularly if plans to allocate wheat for feeding and industrial usage should be carried out. This wheat supply represents the greatest single asset to a policy that would usher in a vital peace. More than half the wheat is located in Canada, the remainder in Argentina, Australia, and the United States, in that order of magnitude.

From 15 to 30 per cent of the weight of this wheat, i. e., the bran, will be utilized for feeding dairy cows in which capacity it is one of the best milk-producing feeds. The return of good white wheat bread will be the most visible symbol of peace in all the countries where it happens to be the traditional staff of life.

Europe will also want a great deal of feed grain from overseas, especially corn, which in normal times counts heavily in the international grain trade. Between 5,000,000 and 10,000,000 tons may become available. Some millet, oats, and barley, probably not exceeding 2-3,000,000 tons, may be moved as well. Pressure to obtain a maximum of feed grains may be expected from European governments the earlier and the more energetically the task to reconstruct livestock herds is undertaken.

Among crops, dried beans and peas present a fairly satisfactory picture as well. These crops fit well into dry farming and can therefore be produced in large volume in Canada and the United States. The 1944 acreage goal for dried beans and peas in the United States has been set at 3.9 million acres but actually only 2.9 million acres were sown. Nevertheless the anticipated American crop should in itself guarantee the availability of the desired amount of this inexpensive relief food, a common item in the European bill of fare. Whether it will be possible to distribute much soybean meal as relief in addition to beans and peas is doubtful. Nowhere in western countries has the housewife accepted it except as an admixed ingredient in certain food preparations.

To obtain all the sugar that Europe will want will not be possible so long as Java is captive and so long as her sugar exports do not regain their former level. The large alcohol production programs

for war industrial purposes have heavily mortgaged Caribbean sugar production, and since a good deal of this alcohol production will probably carry into the relief period, it may be assumed that the sugar situation may remain tight for a considerable length of time. Naturally relief requirements will depend also on the output of beet sugar in Europe.

Two chief relief commodity groups for which supplies are limited remain: fats and oils, and animal proteins. Both constitute the food-stuff which the war has made most scarce of all. Europe suffers from a serious shortage of fats and oils, although the production of vegetable fats continues to increase steadily in response to the highly profitable price levels and the pressures exerted by planning. Our own estimate of fats import requirements for edible purposes as well as soapmaking envisages a need of 500-700,000 metric tons. We assume that it should be possible to obtain the bulk of this volume by a reduction of war reserves and oversize commercial stocks on the British Isles and by a similar reduction of military and commercial stocks in the United States. It seems possible that from these two countries 500-700,000 tons could be made available without disturbing the supply of Russia's requirements of 500,000 tons or more despite the heavy decline of America's lard output in the fall of 1944 and spring of 1945 and the smaller vegetable-oil crops. Such measures are not only justifiable in view of reopening the world's trade routes, but they may even become desirable from a commercial viewpoint. Large stocks involve the danger of great financial loss when a real change in the supply situation arises. If the reduction in stocks should not yield enough or should the requirements be greater, it will be possible to draw substantial additional exports from Argentina, Africa, and other countries, and about 150-300,000 tons from whaling.

Whaling, which is being carried on on a small scale, will resurge immediately after the war. The blue and fin whales of the Antarctic will have had a two-year fortuitous closed season, each of which would have yielded some 40,000 whales and some 500,000 tons of whale oil. If Japan and Germany are eliminated as whaling nations, the bulk of the business will fall to Norway and Great Britain. As soon as whaling ships can be released from war duty they will start expeditions. The first active season may be the one from December, 1944, through March, 1945. On February 7, 1944, Great Britain, Norway

and six other nations with minor interests in whaling signed a new whaling agreement.

If fats are to become available in sufficient volume for European relief, careful consideration must be given to the extent to which the type and form of fats available will meet the needs of the European nations. Naturally, those nations will want fats in forms that can best be used to serve under the prevailing conditions in transportation, processing, and utilization. It is all very well to consider all fats just as fats, because technically they can be converted for different uses. In practice the conversion costs not only money, but in so far as hydrogenation is necessary, it requires complex equipment and hydrogen. Any relief policy must try to supply fats in forms which will do the most good to the recipients. If all or even half the total inshipment were to come as linseed oil or as lard, a major calamity would be created.

Most of the European countries have forced the saving of fats for food use by the drastic curtailments of their use for soap. The Continent is in dire need of a large volume of soap fats or soap. Some official American experts have estimated that Europe will need in the first year of peace more than 400,000 tons of imported soap fats. In evaluating this estimate one must consider that the war has drastically cut the supply of all fats and, in addition, has made only the poorest waste fats permissible as soap raw materials. Medical experts consider the restoration of the normal soap supplies a mandatory measure in restoring the health of the people and fighting widespread filth diseases. It would be advisable, therefore, to have at hand for shipment a substantial volume of the simplest good-quality laundry and toilet bar soaps. Soap in that form can be boxed and shipped and stored easily, the only necessity being that it must be kept dry. If the remainder should be shipped as soap raw materials, the question arises whether it would then be necessary to distinguish between fats for edible purposes and fats for making soap. Only inedible tallow, probably available nowhere in the world, would fall into the category of absolute soap fat.

Food fats could be either butter or lard, or vegetable oils such as cottonseed oil, soybean oil, peanut oil, sunflower-seed oil, or those oils or whale oil processed as margarine and shortening or lard compound. Butter will be in great demand in Great Britain, to some

extent in the neutral countries, and perhaps in a few others such as Belgium. However, it is doubtful whether butter should be given priority in the procurement policies of UNRRA. The Germans have carried their system of forcing a maximum amount of milk into creameries into most of the advanced dairy countries in the fortress. Much skim milk has hence been made available for direct human consumption and much butterfat for distribution.

To illustrate how far such a policy will extend, it may be mentioned that Germany processed in 1943 from the output of her stable dairy herd of 10,000,000 cows over 700,000 tons of butter, or 200,000 tons more than in 1939 from the same amount of milk and thus made more butter available than in prewar years, including all the imported butter. It is true that butter has always been one of the world's leading commodities in foreign trade and therefore will sooner or later regain that position. However, the chief butter market is Great Britain, which has never stopped receiving large amounts of it from New Zealand, and from the Continent which in prewar years exported more than 300,000 tons to England. Considerations of price will induce Continental European governments to try to keep butter purchases down if not to forego them altogether.

Lard, as a low-priced frying and baking fat, will be welcome in certain countries, although it may be questionable to what extent the European market can be won back to lard, because hydrogenated cooking and baking fats have become customary.

The largest volume of demand for food fats will be the one for vegetable oils, margarine, and shortening, and hence the question will be whether it would not be preferable to ship the major portion as oilseeds—that is to say, soybeans, peanuts, sunflower seeds, copra, and others. All European countries have oilseed crushing industries which are the centers of the chief feed concentrate trade.

Finally there remains the market for whale oil, which was the preferred margarine raw material in Germany, as it still is in England and in Norway. Whale oil can be deprived of its repulsive odor and fishy taste only by skillful hydrogenation. Several Dutch and German hydrogenation plants have been destroyed by bombing. Even if six months after liberation all of them should still be in ruins, it would yet be possible to obtain the oil in hydrogenated form from British refineries.

This excursion into the field of fats and oils has served the purpose

of showing that as soon as one ceases to deal in such simple staples as wheat or sugar, very intricate problems surrounding many specific commodities, their intrinsic qualities and utilities, their price, and their comparative availability must be dealt with. Decisions by UNRRA to procure for relief policies dehydrated whole milk, skim milk powder, condensed milk, cheese, or soybeans have, of course, an important bearing upon the dairy industry in the procurement area as well as in the country of receipt. If soybeans are bought in the United States and shipped to Holland, the soybean meal price and the supply in the United States will be affected; so will the domestic situation in the butter and skim milk markets; the situation for the Dutch dairy farmer will be improved.

UNRRA will have to steer a wise course, avoiding any extremes. The diversity of interests and of situations among the various claimants for relief, as well as the not-too-plentiful international supply situation, suggest a policy embracing a wide variety of measures.

As we have already pointed out, the allocation of raw materials for UNRRA's relief and rehabilitation activities will lie essentially in the hands of the Combined Boards, which are responsible for the over-all strategy of the United Nations in the utilization of their economic resources.

It would not be surprising at all if efforts should be made, particularly in the United States, to influence the director-general of UNRRA in making his procurement policies. Farmers may well exert pressure to introduce bills into the Congress for the purpose of obliging the director-general to spend all or a major portion of the funds allotted to UNRRA in the country of origin. Such measures would, of course, sadly impede the freedom of action of this first international agency organized for true collaboration. The best protection ought to lie in the grand strategy of the Combined Food Board.

Yet should UNRRA be proof against such pressure, it is quite possible that several of the member nations will attempt to avail themselves of the services of this international agency for the purpose of diverting surpluses of certain commodities from domestic markets into the channels of export trade. As the League of Nations has shown, food relief policies after World War I distinctly relieved farm commodity markets as a secondary effect. It is all too apparent that by the close of World War II, annoying surpluses in certain commodities will suddenly develop and threaten the price level of other

commodities as well. Late in spring 1944 the War Food Administration was confronted by unexpected surpluses of potatoes and eggs. Even in the case of meat and certain fats a near-surplus condition was felt, caused by delayed exports, bulging cold-storage warehouses, and probably also higher farm and nonfarm production than was expected. A policy binding the government to maintain until two years after the termination of the European war the so-called "support prices" of specific food commodities is bound to create conditions wherein very substantial surpluses will drift into the hands of the public. The domestic channels into which they can be diverted without depressing prices have a very limited capacity, even if charitable distribution is used on a large scale. The easiest outlet that will not lower the domestic price level is still the export market. Naturally, an agency that is able to distribute food and other relief and rehabilitation materials abroad, either free or for less than market value prices, as in the case of UNRRA, will be swamped with offers of surplus commodities. Under such circumstances, it will probably be able to purchase at bargain prices, provided that the selling agencies are willing to take the loss and lower their prices to, or below, the level of the lowest offer in the international market. There is no reason why UNRRA should not render that dual service and relieve one country of surpluses and fill another country's needs.

There remains the problem of the availability of animal proteins, most of which are expensive and scarce. Great Britain and Continental countries urgently desire to restore their prewar habitual per capita consumption of beef and veal, pork and bacon, eggs and poultry, cheese, condensed milk, and fish. The least expensive animal protein is salt fish. It can be made available by a proper procurement policy along the northern Atlantic and the northern Pacific coasts of Canada and the United States, including Alaska. It can also be made available through the reconstruction of Norwegian fisheries. Salt fish can be easily transported and stored, advantages weighing heavily in its favor.

Next in line come salt pork, canned beef, and smoked ham and bacon, whose supply UNRRA will need to consider. The National Planning Association¹² has estimated that 500-600,000 tons of meat would be needed per annum during Continental Europe's critical relief period, and that half of this amount could come from the

¹² National Planning Association, *op. cit.*, p. 29.

United States, and the other half from South America. It is stated that 250-300,000 tons of meat will mean no more than 2 or 3 per cent of probable United States civilian consumption in 1944 and 1945. Since United States civilian consumption, even with such shipments, would remain at the prewar level, it seems justifiable to assume that such a modest policy of relief will be supported, if need be, by slightly tightened rationing or its reintroduction. If, on the other hand, the American public should insist upon abolishing all consumption controls by the time relief is due for shipment, UNRRA could not secure supplies of meat from the United States. It must be made clear, also, that the importation of meat is less imperative to the restoration of the European diet the more the other less expensive foods are made available in sufficient volume, and the more feedstuffs are supplied.

Essentially the same supply situation prevails with respect to milk products such as dehydrated and condensed milk, and cheese. The United States and South America are the two chief sources of supply, and in the United States the shipments to the armed forces and on lend-lease account have been possible only by restricting domestic civilian consumption. In 1943-44 about 90 per cent of the canned and dried milk moving in foreign trade among the United Nations came from the United States. The same proportion of dried eggs also originated in the United States. Imports of dried and canned milk into Continental European countries will have their visible effect in improving bakery goods and enriching the diet of children and other high-priority consumers. It must be emphasized again, however, that during the first year after the initial six months of occupation, the secondary effect of a flow of grain and fats imports will be felt even more than will the direct improvements by inshipments of meat and milk. If feed grain is made available, the chicken flock will improve and more eggs will come into the market. If a sufficient amount of fats gets into the occupied countries from overseas, more fresh whole milk can be distributed to women and children. This argument is made, not in order to offer an excuse for not shipping a large amount of dried and condensed milk as relief, but rather to point out that since the supply of imported milk will be inadequate in any case, the complementary measures toward making domestic fluid milk more abundant carry greater weight.

How relief will be distributed to the nations cannot be foreseen. It would seem natural, though, that Great Britain and Russia would

have priority in improving the diet of their population. In the case of the others, Allies and neutrals will probably rank ahead of the Axis, although military and political expediency may alter these concepts, as was the case with respect to Italy when its status was changed to that of a fighting cobelligerent. Some sort of discrimination will be unavoidable, simply as a result of differences in shipping and distribution facilities. Conceivably, some nations, such as France, may make great efforts to satisfy their import requirements by negotiating with former neutrals such as Argentina. While one may doubt the expediency involved if the Great Powers exert much pressure against such policies, he must not forget that when the war ends, the United States and Great Britain will own and control almost all of the world's merchant marine, and will therefore have a fairly effective way of deciding the order of priority in fulfilling requirements, at least in the initial period.

Prospects for Relief in Pacific Areas

All that has been said so far about relief policies concerned the revival of overseas trade with Europe. Considering the liberation of Japanese-conquered territories in Malaysia also, the supply situation would be changed somewhat; but not greatly, because it will be some time before the flow of foodstuffs from the plantations and the native economy are revived and reorganized to effective performance. In the field of sugar and fats, the full recovery of British, Dutch, and American possessions between the western Pacific and the Indian oceans would bring about a distinct change toward greater abundance. At the same time, the liberation of China would link areas where the demand for relief materials is urgent with the resources of the free world.

If Japan manages to occupy all China while losing all the big islands in the Pacific previously captured, it is not impossible that the world market might very soon be faced with a relative abundance of fats, feed proteins, sugar, and rubber.

The Rehabilitation of Agriculture

Rehabilitation policies cannot be separated from the ones surrounding relief to the population of many war-torn countries. The rehabili-

tation of food and fiber production must be coupled with real relief policies if for no other reason than that an immeasurably more powerful leverage can be exerted through reigniting the productive machinery of agriculture, toward making the relief goods available. Before the war, roughly 90 per cent of the food of greater Europe (including Great Britain and Russia) was domestically produced, and only 10 per cent was imported. In almost all cases, rehabilitation involves the provision of some missing links in the long chain of production requirements. These may be a few vital spare parts for machines and tools, or key materials such as seed, fungicides, lubricants, harness leather, binder twine, coal, or gasoline. To supply such materials or to reorganize their distributive system means not only gambling on future production, but creating employment. Nothing depresses and degrades people more completely than does idleness in the midst of chaos and desolation. On the other hand, nothing can make them more easily forget their misery and help restore their human dignity and self-possession more rapidly than can creative action. He who succeeds in organizing such work has the touchstone of rehabilitation in its noblest sense. It is quite possible that a huge total of relief will be distributed, and that at the same time the spirit of the people to whom relief is sent will falter, and that social and political anarchy will doom all relief work.

Agriculture in Europe is not motorized for the most part, yet a common notion exists in the United States to the effect that since European agriculture is not tractorized it is primitive and devoid of modern technology. Because Europe is so densely settled that every acre counts, electricity on European farms has reached many more farms in most of the advanced countries than is the case in the United States, where the single farm system, together with the size of the farms, have made rural electrification too expensive. In Europe a great many of the agricultural auxiliary industries, such as creameries, flour and grinder mills, and drainage pumping stations are electrically operated. As soon as the power supply is interrupted, they are put out of commission.

The restoration of power lines will probably be the first job the army engineers undertake when military government moves in. After that comes the replacement of the various needs of individual farmers for materials. Live electric current in the plug does not mean that the farmer can go ahead and start up his threshing machine. An integral

part of the apparatus of threshing machines, i. e., leather belting, has been found to make excellent shoe soles, and in World War I was stolen in huge quantities when sole leather was scarce. The replacement of belting is difficult, unless provision be made a long while in advance. Moreover, fuses, brushes, and carbons for motors are other supplies that become bottlenecks once the flow of their supply slows down. Electric bulbs are essential to work in barns and bins.

Machine and implement repair is a task for the local blacksmith shops in the villages, or for the smithies on the large estates. Those blacksmiths are also wheelwrights, and must keep the millions of wagons and wagon wheels in condition. They must also shoe the horses and oxen. These shops need forge coal, iron and steel (round and in bands), bolts and nuts, plowshares and mouldboards, horse-shoes and nails. Obviously, the revival of agriculture must begin with the reorganization of the supply of materials and spare parts to the country blacksmith shops. Spare parts must fit the models of machines in use, and the iron and steel must be the sort to which the blacksmiths are accustomed. The same criteria are applicable to harness-makers' supplies. All the smaller tools and the extensive list of goods needed in the farmer's tool shed comprise the advisory list of commodities carried by the hardware store, which constitutes the department store for the rural household. Since the mixed type farm, so typical of Europe, is a blend of most of the known handicrafts, and endures through the versatility of the men and women who operate it, a vast list of little items the layman would never think of are each vital to the performance of a certain task. The special farm section in the American farmer's "wish-book," the mail-order catalogue, is an illustration of this fact.

If, under an effective reconstruction program, the assignment is not only to get agriculture on its way toward production again by supplying a minimum amount of materials, but also to restore agriculture to its normal functioning, securing spare parts alone is not enough. New machinery must be made available too—electric motors, threshing machines, mowers, binders, plows, cultivators, rollers, harrows, hay rakes, winnowing machines, pumps, conveyors, and the like. To supply all that the farmers may want, of course, will exceed the capacity of industrial production for years. Only a modern economy in full swing, operating in a normal peacetime fashion, can completely supply all the farmers' needs. Rehabilitation as such can hardly

do more than to guarantee first a pump-priming supply of essential machinery, collected from the outside world, in order to bridge the gap between reconstruction and the recovery of the domestic industries.

The next sort of materials needed are seeds and fertilizers. In the case of seed, it seems improbable that the necessary aggregate amount will not be available. The seed supply is well organized; all farmers customarily hold back a certain amount of seed as an insurance against its disappearance from the market. Only in the sugar-beet industry does the situation differ; there, the seed trade is in the hands of the sugar factories. The vegetable seed trade in many countries is highly centralized.

The task of rehabilitation must concern the availability of the necessary seed early enough to assure the possibility of a timely sowing campaign. One potentially important variety of seed presents the relief authorities with particular transportation difficulties. Seed potatoes are the most bulky of all seeds. Frost as well as heat spoils them. Yet, among all the food and feed crops, potatoes rank in Europe next only to grain. They are, in fact, Europe's equivalent for America's corn as the feed for hogs, while they also have the place of a cereal for direct consumption. Ordinarily, Europe has all the seed potatoes needed, but there is a considerable seed-potato trade over the borders, which involves the availability of railroad boxcars. Hence it will be necessary to arrange for an exchange between seed surplus and deficit areas.

To supply agriculture with adequate amounts of fertilizer is another hurdle that those responsible for the rehabilitation of farm production will have to take in each country. Like coal, iron ore, lumber and the chief staple crops, fertilizer is moved by the railroads. The Continent is normally on an export basis for potash and nitrogenous fertilizer while it imports the main part of phosphates used on farms. Nitrogen production is widely scattered while the potash mines are located largely in Alsace-Lorraine and in central Germany. As active warfare ceases to absorb the major part of nitrogen "mined" from the air for explosives, the farmers ought to be the beneficiaries. Possibly some of the greatest single capacity plants may be destroyed by bombing or shellfire, but probably the aggregate total of all factories will be reduced only slightly. The chief concern for rehabilitation must therefore be focused on maintaining or resuming pro-

duction to full capacity, and getting the fertilizer to the farmers of the countries concerned in the proportions needed. With a widely dispersed production of ammonia which is partly a by-product of the coke distillation plants of the steel industry, partly an independent industry, the organization and utilization of this important secondary food resource when it comes to food relief and the rehabilitation of agriculture is a serious international problem. The same holds for potash. Production and fair distribution necessitate a control reaching across national boundaries. German and French mines and railroads must serve the greater cause of all European countries, which normally use potassium fertilizer and whose crop yields depend on it.

Paradoxically it will be much easier for the United Nations to secure an adequate distribution of phosphates among Europe's farmers, although this is the type of fertilizer which is needed most urgently and is not available in sufficient quantity on the Continent. To supply phosphates is administratively easier because the two chief sources, mines in North Africa and in Florida, as well as their shipment are under United Nations control. The exports of phosphates can be directed to whatever ports are selected and from there be shipped inland by water or rail.

The seed and fertilizer proposition has perhaps shown clearly one aspect of the rehabilitation task that is of dominant strategic importance: rehabilitation of European agriculture cannot be successfully and speedily accomplished through decentralized national action alone. If definitely required, the proper functioning of an international or at least European agency to utilize nationally owned resources for the benefit of other nations can bring about the allocation of produce according to need and most efficient use, and can safeguard the intra-Continental transportation of such materials at the proper time of the year. The reader will realize that this one example of fertilizer supply illustrates better than all the others of machinery, fuel, or seed, that the agricultural organization of Europe is nothing less than a segment of the economic organization of the Continent. It does not follow at all that it will be necessary to use political sledgehammer methods to bring all Europe into political unity. It does follow, though, that beyond the restoration of nations, the establishment of the fullest functional economic co-operation among the nations making up the "European Commonwealth," and the prohibition of institutional barriers against such co-operative good neighbor

relations are inevitable requirements. Fortress Europe under the nazis attained functional unity. It attained it by the despicable methods of political and military tyranny and for the sake of Germany's military rule. What perverted the policy were its means as well as its ends; but not the accomplished unity. Free Europe will end in the frustration of all national efforts toward greater welfare unless it succeeds in attaining by free will and for the sake of all the people a similar co-ordination of economic action as the one experimented with and established *de facto* under dictatorial rule.

One way of securing the utilization of the nitrogen industry in behalf of all nations under military government, to cite one example only, would be the immediate restoration of the European nitrogen cartel existing up to now, centrally guided from Berlin. This measure could be adopted only by a European economic council and be executed by order of the joint Allied command. It has the serious drawback that it may prejudice the future solution for these industries during the era of peace. While we do not subscribe to the oversimplified assumption that all cartel arrangements of necessity violate the interests of the people, we do not consider it desirable for the advancement of public welfare that private initiative be forced into the strait jacket of compulsory cartels no matter whether they are national or international in scope. Whether it will be possible to avoid an interim solution in which European cartels are revived will depend on the dispatch and speed with which the channels of international trade are reconnected with all European countries. If foreign trade begins to flow as soon as the areas are liberated, there is little reason why the nations should not try to export what they are able to produce, and to exchange such produce against other materials they need. The most necessary step to be taken, therefore, is the promotion of foreign trade in the direction necessary for the rehabilitation of normal domestic and intra-Continental food supplies.

Position of UNRRA in Rehabilitation

Even if some of the basic raw materials should be made accessible to all nations, an answer has to be found to the question of how an international agency like UNRRA can possibly handle the determination of actual requirements of the countless materials needed by agriculture, and the regional and local distribution among repair shops and

farmers. Nobody can pull the vital data for the requirements out of his sleeve and no analysis of statistics of normal consumption will be of much use either. Only decentralized current reporting on the spot by experts living amidst the farmers will offer hope of a roughly true picture of the real need. The totalitarian regime has organized all such matters, as we saw earlier, by the device of compulsory cartels. Fortunately, it will not be necessary for the United Nations to revive these cartels which operated in full force only in the inner fortress rings.

In all countries very influential farmers' co-operative associations exist. These associations are organized and operated according to the purely democratic Rochdale principles with general franchise and equal rights of all members and officers elected. It would seem a wise policy for the United Nations to designate the farmers' co-operative associations and their roof organizations as one of the institutions through which the needs will be gauged and the supply be distributed. By such a policy, democratic principles and self-government would be encouraged among the rural populations. In so far as fascist cartels have replaced the former co-operative associations, the receipt of rehabilitation materials could be made dependent upon the complete reorganization of fascist-nazi agricultural cartels according to co-operative law.

When it comes to the alternatives of accomplishing maximum results immediately by use of politically dubious if not despicable methods or postponing greater rehabilitation results for some time in favor of finding more sound and solid solutions for the long term, much is to be said in behalf of the latter. It must not be forgotten that fascism as well as the nazi tyranny could never have risen to power had not the farmers joined the ranks of the totalitarians out of sheer economic opportunism. Thus it will be necessary to build strong bulwarks against the renewed onslaught of totalitarian propaganda in new disguise which can be counted upon to appear. There is no better countermove against the gospel of the leadership principle than the expansion of the co-operative movement. The Council of UNRRA would simply have to declare that after having cleared through their government, farmers' co-operative associations would be eligible as recipients of relief materials and should receive preferential treatment.

Immediate Postwar Position of Europe and Her Economic Role after Restoration

From what has been said about the requirements of food relief and the need for rehabilitation materials for Europe's agriculture, it seems quite obvious that immediately after the termination of hostilities the farmers in overseas exporting countries will enjoy for some time a continuation of a heavy demand for many basic foodstuffs and a stronger demand for cotton, flax, hemp, sisal and jute. International planning and funneling of purchases of all foodstuff and raw materials will probably prohibit wild competition and the skyrocketing of prices for available stocks. Yet prices may still show a tendency to rise. Nevertheless, it seems possible that a continuation of the trend toward expansion of production in the Western Hemisphere combined with the continued and accelerated expansion of agricultural output in Europe may begin to outrun the potential effective demand for certain commodities in the relief period of one to two years following the first six months of occupation. The price levels may show the first signs of a recession. Naturally the extent to which such termination of the war boom for agricultural commodities will develop will depend on many unpredictable conditions, most of which are man-made by national and international policies. The size of crops overseas as well as in Europe, the output of animal products in both zones, the degree of industrial employment and domestic demand in the United States, Great Britain and the Continental importing countries, the degree of demobilization and disarmament, are some of the key factors deserving careful consideration in any review of the likelihood of a postwar agricultural recession, particularly in the United States. In general, the war has boosted the production capacity of agriculture in most of the important areas, including Europe. Such increased capacity and its full utilization would certainly lead to oversupply and price depression unless, after the war, the effective demand for food, particularly food of animal origin and in general high quality food, should be sufficiently expanded to absorb the production increases. In the long run, the increases in production may be so absorbed.

In the United States the war has strengthened a strong current of public opinion which considers it a major task to extend charity

generously to the impoverished European nations that were conquered by military aggression. Behind it is the tacit assumption that America has unlimited economic resources and an incomparable wealth of agricultural and industrial production, while Europe's agriculture is feeble in its natural resources and incomparably poor in its equipment and techniques. These ideas are engrossed by long years of absorption of day-by-day news items which all focus around the deterioration of the enemy's food economy. They will be rudely shaken by the discovery that European agriculture is very competent, and is a serious competitor with American agriculture in the European markets. Nothing could be more advisable for those who have to shape the production and export policy for American agriculture during the postwar years than to ascertain with a candid eye what the actual condition of European agriculture is, and what will be its prospective output of specific commodities as soon as the Continent is thrown open for such *prima facie* investigation. In November, 1918, the war ended in Europe, but hardly was the relief period drawing to a close when postwar depression struck American agriculture in 1920 and tens of thousands of new war-boom wheat farms were abandoned. It is by no means impossible that a similar turn of events will take place.

CHAPTER VII

The Basic Controversial Issues in a World Agricultural Policy for an Era of Peace

AFTER the experience of the agricultural depression of 1920-21 and the immeasurably worse agricultural crisis which began in 1928 and hit bottom in 1932-33, the belief that sooner or later all will be well in agriculture once the war is over and peace in operation inspires little confidence. The conditions of this world never have drifted, and never will drift, by themselves, to a balanced state wherein the innate requirements of the good society are satisfied; they can be molded into harmony with the necessities of a livable world only by the supreme effort of all nations, under the leadership of farsighted statesmen. Thus, to create the political, social, and economic conditions under which agriculture in the various countries can make its optimum contribution to the pursuit of life and happiness requires, first of all, absolute clarity about the place assigned to agriculture in the life of a nation, the nature of its desired functions, and the means of attaining optimum performance accordingly.

The layman will probably find it absurd to assume that the world's legions of agricultural experts should not have the right answers to all these questions, and many an expert who subscribes to one of the "schools of thought" in agricultural policy will probably find it strange that his knowledge of what is desirable and attainable for agriculture should not be the common possession of all the initiated. Unfortunately such deterministic self-assured points of view are neither justifiable nor tolerable, because they all ignore the indigenous controversial and vexing nature of all major problems concerning the supposedly best policy for all nations. The sad course of the last 20 years of contemporary history is, in itself, the most disquieting illustration of the confused mind and will of the people in many lands with respect to the future course of foreign and domestic affairs. If the future condition of agriculture in various countries depends upon a course of political action wisely chosen by the statesmen of each,

it is not yet significant when a board of experts, however brilliant and well qualified, maps out such a course or alternative ones to choose from. When the people at the polls—and that means in advanced countries more nonfarm than farm people—see eye to eye the great issues at stake and the alternative courses, and when their majority sees fit to agree upon and to endorse the same one, then, and only then, will a policy emerge which has the motive power to reconstruct agriculture beyond granting temporary respite between war prosperity and a more cataclysmic depression.

There is hardly a subject on which the public entertains so many misconceptions, fanciful illusions, and downright romantic folk tales as on agricultural policy. In this age of specialization it is not surprising that even many a worthy economist should begin to feel like a landlubber at sea whenever he is faced by problems of agricultural policy. Moreover, vested interest groups in all countries spring to the defense of their selfish motives with most honorable general ideals and incontestable values. If someone resents the greater efficiency and lower costs of foreign competitors and is busy lobbying for discriminating against them and fencing them off by duty or excise tax, it is in all countries a breach of political etiquette to say that he does not want to lower costs or to start another business and therefore wants government protection. What, in that case, he does say in every language under the sun, with bitterly few exceptions, is that he does not want to see labor sag to the living standards of Chinese coolies, that he can hardly be expected to meet successfully unfair competition from richly endowed competitors or the exploiters of slave labor, virgin soil, a better climate, or what not. If all the conventional methods of ideological camouflage fail, then sometimes the time-honored safety device against foreign competition is employed: insects, bacteria, amoebae, or viruses are discovered in foreign vegetable or animal matter, the importation of which might well-nigh ruin the wealth of the nation. In this case again, one need never become so indecent as to mention that the protection of the assertedly menaced wealth of the nation would, as an insignificant by-product, yield price protection and prolonged business comfort to the initiator of the exclusion ordinance. The author's experience as head of Germany's Institute for Agricultural Market Research as well as his observation in other countries has left no illusion about the internationality of the common detours in pressuring for trade barriers.

Facing this awkward state of affairs, we feel obliged to review some of the main controversial issues of a world agricultural policy or national policies toward agriculture which the reader should have clearly in mind before we can undertake to draft the outlines of alternative policies of reconstruction.

The Farmer-Conscious Century

During the nineteenth century, farmers in all countries continually lost influence, even where the industrial revolution had barely reached its preliminary stage. In all democracies they lost their power to the industrialists, to the businessmen, to the urban population, and finally to organized industrial labor, but in the twentieth century it is one of the phenomenal and quite unexpected political developments that farmers, everywhere in the world, have gained far more political power than they ever had or lost a hundred years ago. They have won it by organizing themselves or by being organized through the government or even without either process of union. Except for Russia all governments have become sensitive to farmer-resentment, unrest and economic pressure. In all countries whose laws incorporate the basic institution of private property as a means of production, the threat of a revolt by the most property-conscious and conservative social group, the farmers, cannot fail to be particularly disquieting. In some of the most highly industrialized countries where labor is highly unionized, national economic policies have been precariously wedged between the pressure from organized farmers and organized labor, which does not mean that the labor unions are necessarily inimical to the interests of farmers. Organized labor has frequently taken a keen though not entirely unselfish interest in the matter of farm relief and agricultural policy. Yet, they find it expedient to use any concession made by the government to farmers as a welcome claim to compensatory action in their behalf. Farm blocs frequently reciprocate with the same procedure.

Therefore, since all governments are unquestionably farmer-conscious and beyond that, very farmer-sensitive, they will have great pangs of conscience whenever the economic interest of their farm population runs, or at least is said to run, contrary to certain good neighborly policies of international collaboration. Indeed, construction of sound international conditions for agriculture must have its

foundation in sound conditions of national agricultural systems. Nobody who wants to see world agriculture prosper can ignore the proper interest of farmers in any country as measured by the welfare of the entire commonwealth. What, then, is the intelligently interpreted and just claim of farmers?

The Claim of "Agricultural Fundamentalism" ¹

A doctrine adhered to the world over claims that agriculture is the foundation of national prosperity more than any other industry or occupation. This doctrine, which could perhaps be traced back to the economic theory of the physiocrats of the eighteenth century, is deeply rooted in the historical experience of nations which have seen the recurrence of famine and city-starving wars, as well as in a great variety of incoherent ideologies and sentiments, many of which are never questioned or challenged despite their irrationality. Behind that doctrine, moreover, lies all the collected resentment against the real evils suffered in consequence of the industrial revolution—either symptoms or by-products of it.

Agriculture is said to be different from all other production because of its biological nature, because it is eternal, because it keeps man close to the soil and mother earth, because it provides food, clothing, and shelter—the three basic needs—and because it is mentally and physically a healthier occupation than most industrial work, and as a craft of artisans gives greater satisfaction in work than most urban occupations.

Aside from these assertions, the claim is made that a nation loses its balance in the economic and social structure as the broad layer of primary agricultural producers shrinks. The structure is said to become "top-heavy." Moreover, such "top-heaviness" is supposed to increase the violence of cyclical business fluctuations, of unemployment, and social frictions. The agricultural population has a higher birth rate and its population surplus continually replenishes the self-consuming city population which would die out without being fed by this farm-to-city migration. The farm population, mentally oriented in the family toward production rather than consumption, independent and self-reliant, is credited with qualities assuring greater

¹ See J. S. Davis, *On Agricultural Policy 1926-1938* (Stanford University, California, 1938), ch. II.

political stability, more responsible and patriotic behavior on the part of the "substantial citizen" than are the anonymous masses of laborers and white-collar workers.²

In the modern industrial world this general doctrine was reinforced by the upsetting urban experiences in the great depression and more intensely in World Wars I and II. It is far from being 100 per cent wrong. Indeed, while it exaggerates and distorts many of the specific items of truth and therefore deserves more skepticism than uncritical reverence, its broad acceptance by many statesmen and politicians, by many economists of repute, and the acclaim of certain of its aspects by the general public, indicate that the sum total of these sentiments must be considered as a major political factor in determining agricultural policy.

This doctrine is accepted most commonly in every country of the European Continent excluding Russia. It is very popular in the entire Western Hemisphere, including particularly Central and South America but also the United States. And it has even great currency in Africa, Oceania, and Asia excluding Siberia. Germany and Japan, two leading industrial nations, have religiously adhered to the doctrine, though in their powerful industrial impetus, both nations have found it impossible to maintain the balance between the farm and nonfarm economic sectors.

The nation that has primarily and uncompromisingly challenged agricultural fundamentalism is England. The other nation, which has taken a similar position since 1917 for different political though not economic reasons, is Soviet Russia. This should clearly be kept in mind, because this basic difference in attitude toward industry and agriculture will prove to be of great practical importance in the post-demobilization period.

We cannot endeavor to analyze in detail the almost endless array of beliefs, assumptions, and assertions blanketed by the fundamentalist doctrine, but will comment on pertinent points as we see fit later. To try, though, to educate all the millions of voters throughout the globe in the space of a few years about the half-truths and the all too many pitfalls of the doctrine seems futile. Fully 70 years of heated and high-spirited, sometimes sober and rational public debate in France,

² O. E. Baker, *Why I Want My Boy to Be a Farmer* (address before Farm and Home Week, College of Agriculture, University of Wisconsin, February 7, 1936; mimeographed).

Switzerland, Italy, and Germany and a similar span of debate in the United States have not defined the issues more clearly, but have promulgated instead greater complexity and deeper mysticism. (This experience might well discourage the enthusiasts, who plan to "re-educate" the people of Europe under military occupation about their real interests.) Political realism requires not only the positive clarification of the basic issue, but also taking proper account of the political weight of the popular adherence to agricultural fundamentalism in this country and abroad. The untenability of the major claim, namely that as a "form of living" rather than as a business agriculture deserves exceptional and priority treatment among all the professions, will become evident as we review in this chapter various specific supplementary claims. Nations have the duty to pursue a balanced utilization of all their resources for the reduction of poverty, decent cultural life, and to secure the pursuit of happiness of all men of good will. Agriculture represents only some of these resources.

The Claim of Importing Countries to Agricultural Protectionism

There are quite a few countries whose population has either numerically, or through advanced purchasing power or through both, outgrown the existing capacity of agriculture to produce all their food, feed, fiber, and agricultural commodity requirements. After the demobilization period they will want, therefore, to import some of these materials, but will likely discover that their farmers will ask for heavy price protection. Their laborers and perhaps even most industrialists may support such price protection along with quantitative guarantees for an increasing share in the domestic market. If a country with export industries embarks on a policy of admitting food imports free, the foreign producer with the lowest cost c.i.f. port of delivery will do the business. If his quality should at least equal that of the domestic product, and his deliveries coincide with the marketing season of the latter, his supply will begin to exert pressure upon the market and depress the price as soon as the combined domestic and foreign supply approaches the saturation point of demand. If the foreign competitors find the market attractive enough even at a lowered price or if they should receive subsidies for dumping abroad, they will try to squeeze more produce into the market. The domestic

producers will be subjected to severest pressure with the risk of losing out in their domestic market.

At this point the public will hear the distress call of the domestic producers. The latter may try to shift to other products, or, by a variety of improvements in their production technique, curtail their costs, improve their product, process it or deliver it at different seasons. Such adjustments require alertness and entrepreneurial elasticity. They usually involve some loss of existing investments and the addition of new capital. This highly desirable process of adjustment will take place as long as business in general is not stagnant or does not recede in the approach toward a depression or in the midst of it. If the industrial export business continues unabated or expands, if nonagricultural employment is reasonably good, the government may grant some adjustment aid, but will not interfere with the importation of food. It will not take refuge in the instrumentalities of protectionism unless it wants to prohibit a change in the structure of its domestic economy.

The chief reason for prohibiting a shrinkage of the domestic primary production of food and feed has always been, and in the future will continue to be, the anticipation of the risk of another war and reliance in that emergency upon domestic food resources. One of the best historical examples of the use of that policy is provided by Switzerland. This oldest, and by all standards most industrialized and most democratic of nations, has chosen ever since the nineties of the last century an ever more determined course toward agricultural protectionism. The main motives for it have been the desire to maintain a strong, healthy, and well-to-do farm population for political reasons, and to balance the social and economic structure; but in this landlocked country the sense of danger in case of war and the anticipated risk of losing political independence and freedom have been powerful supporting thoughts.

How far Continental European import countries will abandon the fear of renewed military emergencies will depend upon the character of the guarantees for organized peace after this war, and the faith the nations put into their validity and durability. The precedent of two world wars in one generation is not a particularly assuring background, and the frequent frictions and tensions among the four major Allies even before their victory are heavy mortgages upon the

confidence of all the smaller nations in the guarantees created in the future peace arrangement. A valid commitment of the major powers to enforce a universal system of collective security might eliminate the fright of famine. It would not eliminate the holy respect that all smaller nations have for risking exposure to foreign economic pressure once the country has become vitally dependent upon food imports, as long as no international pact exists that outlaws food blockade as a legitimate means of warfare, as was proposed by President Hoover. The specter of international commodity agreements and efforts toward "price stabilization" in behalf of exporting producers, traditionally connected with such agreements, must further chill the willingness of governments of importing countries to consider greater division of labor with farmers abroad by way of foreign trade. Food is, as Bertil Ohlin has stated,³ the basic raw material for all exporting industries. Its costs are not immaterial. What if their imported food is cheap only as long as it squeezes itself into the market and the produce of domestic farmers out of it, and what, furthermore, if it should rise far beyond the price formerly paid to the "marginal" domestic producers!

We do by no means suggest that this is most likely to happen, nor is it at all necessary that it should happen. We do emphasize, however, that it is this sort of reasoning that has always most seriously affected and will affect again the decisions on protection or freer trade in food, feed and fibers. This fear can be met only by the most solemn and binding commitments of the Great Powers to all the signatories of international economic agreements and in the preambles to trade treaties not to pursue and not to tolerate policies that exploit the consumer in importing countries. This is the more necessary and required by farmers since the increasing volume of food imports causes such structural changes within a few years that in case of unsatisfactory experiences a country cannot simply return to its former status.

One of the assurances that could be offered to all food-importing nations would of course be the outlawing of the food blockade as a means of warfare. We cannot see any valid reason against such a bold and epochal policy by the great naval powers. In fact, we consider it as a move that would considerably strengthen them militarily because it might eliminate the superstitious belief that by virtue of food blockade alone military aggression can be pro-

³ *Interregional and International Trade* (Cambridge, 1935), p. 215.

hibited or, once begun, can be broken. Outright abandonment of food blockade as a means of warfare, if believed by the potential victims, would in fact establish a valid foundation for all nations to embark on a policy of international division of labor in the production of food. Without it a shift toward greater food imports, however profitable it may be economically, cannot fail to render the country that steers such a course more liable to potential blockade pressure.

Prevention of aggression must be technically guaranteed by preventive military vigilance and alertness of the guarantors of peace and automatic action of an international police force, but basically by establishing an order of reasonable and fair compromise between the economic interests of nations.

That in all the scores of peace plans no mention is even made of this constructive breach with an inglorious past of food blockades while the most exalted and even purely utopian plans find wide publicity and support indicates only the underestimation of the deep-rooted and alert instinct for the lurking threat of famine which is one of the inherent traits of all old civilizations and one of the reasons for the survival of their people. While it is perhaps asking too much that such a proposal should be made by the major naval powers while they are still fighting the war with the support of blockade pressure on the food economy, it seems high time to come forward with it as soon as victory is won, because in the absence of it the century old Continental autarchy will be strengthened.

The naval powers of the English-speaking world must realize that they have no interest in weakening their strategic position for the future by strengthening intra-Continental trade in Europe at the expense of ocean-borne trade between continents. Russia's rising might will by necessity rely on the soundness of Mackinder's theory concerning the unconquerability of the Continental heartland. The naval powers cannot want to force Europe into Continental self-sufficiency.

Yet, even if the naval powers should abandon and outlaw food blockade, there remains another crucial nexus. No country with intelligent leadership will embark on a policy of shrinking its agricultural sector simply on the vague prospect of exporting more industrial goods. Its government, particularly its organized labor and its industries, will want to see some guarantees that the gain in exports will

at least compensate for the loss in the domestic market to their farmers who try to shift into other employment. Such guarantee cannot be given in quantitative terms, but the nature and duration of trade treaties must be such that it inspires the industries and the labor unions with the reasonable expectation of an expansion in business. The matter is further involved by the sequence of events in the domestic market which may be expected if the industrial and commercial phase of such a freer course in foreign trade comes to pass. If the industries expand because of the stimulus in the export end of their business, they create more consumer purchasing power and offer new opportunities to quality-producing domestic farmers; thus a good deal of the slack in the farm business may be taken up within the field of agriculture itself.

Essentially the claim to protection of domestic agriculture leads to the moot point whether or not the vital interest of a nation is to maintain an agricultural sector with employment for a specific proportion of all gainfully occupied people, and to maintain specific commodity branches. Or, if this is not an aim in itself, is the real aim to create the optimum real income, security and satisfaction in work for the nation as a whole? And to what extent can one stake the well-being and security of a nation upon the reliance on stable international relations among large and small countries alike?

Fortunately, no nation need go to the extreme of the policy pursued by Great Britain where only 7 per cent of the gainfully employed people are farmers and 80 per cent of the food is normally imported. Aside from the scanty natural resources the densely populated Isles had for more than a century been an indivisible part of the Empire and the security of food imports as well as the security of the Isles depended on the world supremacy of its navy which guaranteed the *pax Britannica* on the seas.

The proportions for such changes to be envisaged for perhaps two decades as desirable for a general expansion of the world's economy are perhaps best indicated by the example of Germany from 1919 to 1939. Between the two world wars her national income rose to 75,000,000,000 marks and fell to 56,000,000,000 marks. During the same period the value of food imports fluctuated between 1 and 4.5 billion marks, or the volume of food imports, measured in equal prices, ranged between 4.5 and 2 billion marks. This high and low involved the greatest prosperity and the lowest ebb in foreign trade. During

the same period, the cash gross income of German farmers fluctuated between 10.2 and 6.4 billion marks, or if expressed in terms of equal purchasing power between 10.2 and 8.4 billion marks. When their sales yielded the greatest gross returns, food imports were high; when their gross returns hit the bottom, imports were at their lowest.

These data illustrate that the changes in national income, caused by the volume of industrial employment, and the great elasticity of foreign trade leave sufficient leeway for changes in the imports of food without requiring or causing drastic structural changes in agriculture. *An improvement of the foreign trade of agricultural exporting countries need not be and should not be a matter of taking parts of a limited market away from the farmers in the importing countries. Such improvement must come simultaneously with an expansion of industrial exports and a broadening of the food market in the importing countries, as well as some adjustment in the type and quality of domestic production.*

The chief error in the whole argument for high protection of agriculture in the importing countries lies in static concepts of economics closely associated with the realm of political tyranny, as we will later observe.

The Claim of Agricultural Exporting Countries to the Opening of Foreign Markets and Their Controversy with Domestic Industries

The difficulties hampering a freer flow of agricultural goods in international trade are by no means all the result of agricultural protectionism in importing countries. Often enough greater obstruction committed by the agricultural exporting nations is responsible for it. At the same time they are the chief industrial importers, and sooner or later reach the point where they want to develop industries of their own, even if these industries should at the outset be confined to simple processing of food for export, such as the crushing of oilseeds or the decortication of fibers.

No country can justly be denied the right to develop its own industries. One may question the wisdom of building specific industries if they operate at a natural and technical disadvantage in comparison with foreign industries to the extent that they mean a potential reduction in wealth; but one can hardly challenge the essential right of

any nation to pursue that course. If a policy shall be fostered that would avoid extreme measures of economic nationalism, it must be made mutually profitable. Coercion, even if temporarily feasible, will not, in the long run, solve anything.

The United States is the most outstanding example of an agricultural exporting country that has pursued a policy of protecting its industries with considerable tariffs. These tariffs were invariably introduced as an initial protection for infant industries, but somehow they were always maintained although the industries had long outgrown the stage of infancy or adolescence. So long as the country borrowed capital from other nations for its own development and so long as the import duties on industrial goods remained within moderate limits, the export of agricultural products was not seriously impeded, but when, during World War I, the country had become a creditor and began to raise its tariff walls against foreign industrial goods, agricultural exports held up only as long as the capital for payment was exported also; and when lending ceased the volume of exported goods dwindled increasingly.

If America's farmers want to regain their share in the European cotton, tobacco, wheat, lard and meat market, they can do so only by seeing to it that the duties on industrial and certain European agricultural quality imports are lowered. The foreign customers who need the food and fibers badly and want to buy them will still have no way of getting them unless they can pay. They are equally eager to use their industrial goods, their shipping, insurance and tourist accommodating services in payment, provided that America is willing to accept such payment and does not stop the flow by making the foreign goods too expensive to her own consumers who are desirous of obtaining them. To say simply that the United States is capable of producing all her people need and that therefore the United States should not bother with foreign trade is, of course, not a friendly but a hostile attitude. To own by a fortunate history and national accomplishment a major part of the most decisive raw materials and the greatest productive capacity in industries of all nations is in itself such a privileged position that to deny the others a share in the vital products means to shun the natural obligations implicit in peaceful cohabitation with other nations.

In arguing in behalf of their protection against foreign competition, the industries always labor hard to prove the need of it. They point

out that their competitors have lower costs and that the differential must be closed by the duty. Foreign trade loses not only its main incentive and propelling force, but much of its right to exist if the comparative advantage expressed in the costs and thus in the price is eliminated by duties. The net gain obtainable by both partners in the exchange of goods is the secret by which foreign trade is actually able to bring greater wealth to all parties.

If country A produces an automobile at a cost of \$3,000 which costs only \$1,000 to produce in country B, and if A produces certain fruit preserves at a cost of \$1,000 a ton which cost \$3,000 a ton to produce in B, A as well as B are simultaneously making an extraordinary net gain if A exports a ton of preserves for \$1,500 to B and B exports to A a motor car of \$1,500. Each has received the goods producible at home only at high cost at half the economic effort and has therefore with the same effort been able to buy and consume twice as much as if the goods were made at home. In practical terms this may mean that in country A 100 times as many people can afford to use a motor car and that in country B perhaps millions of people may enjoy eating the foreign fruit who might neither be willing or able to buy it if it were grown at home. A duty that would raise the price of all imported motor cars to \$3,000 or more and of the imported preserves to \$3,000 per ton as well would not only wipe out the net gain on both sides but stop the exchange, limit the demand and thereby reduce the production and the necessary employment. In reality it is usually not one commodity on each side that suffers. Often one exported commodity pays for many dozens of specific imported goods whose availability makes an immense difference to the people. If the export of rubber pays for the whole range of goods sold in an American five-and-ten-cent store, one may inquire what this means in a country that would have to do without if it tried to produce all the five-and-ten goods behind high tariffs and at a multiple of costs at home. And yet, such is the devilish nature of nationalistic foreign trade policy that one act of ruthless and ill-advised selfishness almost inevitably forces the other party to retaliation, and that retaliation invariably hits branches of the economy other than the one responsible for it. If, then, government in a democracy shapes its foreign policy only by yielding to pressure exerted by organized groups of vested interests, high tariff walls will be built.

That agricultural nations make efforts to develop industries of their

own is natural, and from the standpoint of the improvement of the wealth of all nations, is desirable. However, whether those efforts will lead to conditions detrimental to the well-being of the other parties involved, and to undue delay in the attainment of the goal in the industrializing country itself, will depend entirely on the method employed and the rate of progress selected. Gradual development of industries, especially with the aid of long-term foreign investment, need not cause any disturbance in the normal relations of agricultural exports to other countries, even if moderate duties protect the new industries during their infancy. With the radical curtailment of industrial imports, industrialization *perforce* will play havoc with agriculture and needlessly and unduly raise the social cost of the industrialization process.

Industrialization and Agricultural Progress

In the discussion among farmers in overseas agricultural export countries, it is frequently assumed that their export markets in Europe would widen if the eastern and Danubian agrarian countries would start to build more industries. Such speculation would ignore several factors that make it improbable if not practically impossible for these countries to disappear from the world's export market for agricultural products. Even if the industrialization process should assume the intensity and scope true of that in Russia in the last two decades, something remotely possible, it is doubtful whether these areas would become agriculturally self-supporting or shift on the whole to a net-importing position. Since the unutilized agricultural production reserves are great, and industrialization invariably stimulates farming, it must be anticipated that any degree of industrialization will be accompanied by even greater efforts to improve agricultural output by better techniques, equipment, and efficiency. It is probable that the industries with the greatest promise of successful business would be those manufacturing farm machinery and implements. Industrialization leads to a change in consumption levels as well as to a greater volume of purchasing power. Hence the demand for more valuable food commodities improves and agriculture shifts the emphasis in production from crude foodstuff and food raw materials such as grain, potatoes, and pulses, to more animal products, fruits, and vegetables. It is quite likely that a wider domestic market would lead

to a greater exchange of food and feedstuff. While some items might be imported on a higher scale, others for which conditions are more favorable, will be expanded and exported in larger volume.

*The Desirable Division of Labor between Temperate Zone
Farming and the Colonial Tropical Plantation
Economies*

In pondering the future of world agriculture, one cannot overlook the probability of the persistence of previous trends. Modern industry has created a demand for increasing amounts of raw materials which can be produced with a minimum of costs in the tropics and on large-scale plantations. Rubber, several vegetable oils and vegetable proteins, sugar cane, and quinine-bearing cinchona bark are some of them. The national diets of western countries gradually have adopted various items which again are best grown in the tropics. Coffee, tea, cocoa, bananas, dates, many spices fall in this category. In all advanced countries a considerable part of the imports of agricultural products consists of items originating in tropical plantations. Farmers in the temperate zones have never objected to the import of commodities such as rubber, coffee, tea, cocoa, spices, or quinine.

But with reference to vegetable oils, cane sugar, and bananas, the whole arsenal of tariff protection excise, processing or import taxes, and plant-pathology measures has been marshaled into service to stave off the asserted damage to domestic agriculture by such undesirable competition. It is true that wherever beet sugar is produced, the importation of tropical cane sugar is felt in the sugar market and lowers the price of sugar beets. Special progress made in the breeding and the technique of cultivation and harvesting of cane in the last three decades has proved that cane can be produced in the tropics at a lower cost than beet sugar in the temperate zones. Sugar-beet growers in all countries are therefore protected by the government either through import duties or excise taxes, or they receive outright subsidies. If free competition were the rule, no sugar beets would be grown in countries with high farm wages and an abundance of low-priced cattle fodder, such as the United States. All the sugar would be imported from tropical cane sugar areas. In countries with intensive farming, costly land, relatively low farm wages, and a scarcity of cattle and sheep fodder, sugar beets would still be grown if cane entered the

market without discrimination, though perhaps not to the same extent. Since contrary to cane, sugar beets yield tops, leaves and pulp which has bagasse and molasses as the only by-products, more valuable feed materials for the ruminants, and since they yield more food calories per acre than any other crop, their protection against the competition of tropical cane sugar has been considered imperative as an indirect means of support for cattle and sheep farming.

Ever since the depression of the world sugar prices in 1928 and the following years, efforts have been made to find a satisfactory solution which would avoid overproduction of sugar for the world market. The leading tropical producers, Cuba and Java, took the initiative in 1930 and following years toward an agreement among all the exporting sugar countries, cane and beet growers alike. The resulting Chadbourne Plan and the agreements between the exporting countries tried to reduce the unwieldy stocks by curtailment of production during the years 1930-31 through 1934-35.⁴

In the meantime, the World Monetary and Economic Conference of 1933 had recommended that "Negotiations should continue with a view to establishing and maintaining an orderly relationship between the supply and demand for sugar in the world market."⁵ Under auspices of the League of Nations, an International Sugar Conference was held in London from April 5 to May 6, 1937, and the International Agreement Regarding the Regulation of Production and Marketing of Sugar was signed by eighteen exporting and four importing countries. This agreement obliged the exporting countries to export no more than an allotted quota, and the importing countries to admit a certain quota of foreign sugar. It established an International Sugar Council and made arrangements for a five-year period from 1937 through 1941.⁶

This is not the place to elaborate or try to evaluate the sugar agreement. This simply demonstrates that during the years between the world agricultural crisis and World War II, all governments, including the United States and Soviet Russia, agreed upon a policy that by quota agreements tried to regulate and control the competition be-

⁴ Hans Wilbrandt, "Der Stand der Deutschen Zuckerwirtschaft," *Blätter für Landwirtschaftliche Marktforschung*, II, October 1931, pp. 203-207.

⁵ Hans Wilbrandt, "Die Problematik der Deutschen Zuckerpolitik," *Deutsche Agrarpolitik*, 1 (Berlin, 1932), pp. 308-313.

⁶ League of Nations, *Economic and Financial International Sugar Conference*, 1937 (Geneva, 1937), p. 8.

tween the tropical and subtropical plantation areas and the farmers in the temperate zones with reference to the production and marketing of sugar. This agreement represented a typical international cartel, concluded by governments instead of private industries. It protected a status quo by voluntary action.

There is no other example of similar importance for international arbitration of the competitive struggle between the tropical plantations and the farmers in the other climatic zones of the globe. In the case of tropical fats and oils versus fats and oils produced in the importing but fats-producing countries, import duties and excise taxes were used to stave off a decline of domestic fats production. This is particularly the case in the United States, where before 1939 price protection was so effective that fats production increased. During the war the country reached the state of a net exporter of fats and oils. The issue of reducing the boosted domestic production and permitting the coconut oil from the Philippines, palm and palm kernel oil from the Dutch East Indies and Malaya to enter the United States market again by lowering duties and excise taxes will mean a great deal for the revival of agriculture in those areas and of the export market for industrial goods there.

Bananas are another important export item for tropical areas, especially in the West Indies and Central America. Producers of deciduous fruits in banana-importing countries have frequently exerted considerable pressure on their governments to obtain protection against the rising consumption of bananas or any tropical fruit. They argued that in view of the limited food budgets of the consumer families, such fruit would displace domestic fruit in the diet. It is doubtful indeed whether the competition would operate so simply in that direction. There is much evidence for an entirely different effect of a seasonal import of fruit from the tropics. It seems to strengthen the tendency of western consumers to give fruit in general a more permanent and broader place in the diet throughout the year, whereby the demand for domestic fruits such as apples, pears, and small berries in other seasons would also expand. The losers in such a gradual shift would not be the domestic fruit producers but perhaps the grain and dry-bean marketing farmers or the producers of still other products. Ultimately the argument that for the sake of agriculture in temperate zones foods produced in the tropics must be excluded turns out to be as shortsighted and untenable as most other monopolistic ideas

about the paradise of a fully protected market surrounded by high tariff walls. Farmers do not live best when they have consumers at their mercy, but only when the consumers enjoy good real incomes that represent a great volume of effective purchasing power in view of the prices of goods and services. The colonial economy happens to be an excellent market for industrial goods. Hence its ability to buy is of very real interest to the farmers in the industrial countries.

Fortunately, the colonial plantation economy will not always rely exclusively on the export of a few commodities such as rubber, sugar, fats, or bananas. Gradually a modern economy creates a demand for additional raw materials. One of the rather new and rapidly expanding industries produces fungicides and insecticides. It is closely associated with the soap-manufacturing industry. In turn both need supplies from the perfume industry. Certain disinfectants, fungicides, insecticides, essential oils and perfumes are manufactured with the use of substances extracted from particular plants. Pyrethrum and rotenone, for example, are the active agents in insecticides in wide use in modern agriculture and horticulture. These substances are extracted from plants grown in the tropics. Since the greatest use of powders and solutions containing rotenone and pyrethrum is being made by the most advanced farmers and horticulturists in the temperate zones, this new business creates an exchange of products between farmers in the tropics and farmers in cooler zones. This is not, of course, the sole example of a strong demand for tropical farm products by farmers in the temperate zones. The latter have no objection whatever to the use of tropical spices in the kitchen, nor of coffee or tea, nor of quinine and other pharmaceutical products grown in tropical zones. They do not want to see those commodities, or binder twine, burlap sacks, car tires, rubber boots, or other materials essential to the farm plant made expensive or prohibitively costly by import duties.

Tropical forest products such as pulp and quality timber may be in greater demand as the consumption of rayon, staple fibers, paper, and wood as an industrial raw material increases. The development of fiberboards, plywoods, and plastic and wood combinations open new vistas in consumption. Under its stimulating effect, forestry in temperate zones will advance more toward sustained yield practices, but part of the supply will be sought in the tropics where the rate of growth is faster and virgin forests are still abundant. Newest types of power-logging equipment and track-laying tractors and heavy trucks

make lumbering in the tropics commercially more feasible. Lumber and pulp imports are one of the best means of preventing overcutting, and of fostering forest conservation in the older countries.

Collective versus Individual Farming and the Size and Structure of Farm Units

One of the oldest and most bitterly contested issues of agricultural policy concerns the question of the most advantageous and desirable form and size of the farm unit. The debate has gone on for generations. It concerns the basic institution of agriculture as well as society at large, property or other forms of combination between management, labor, land, and capital. Since it concerns the fundamental sections of the "law of the land" and the alternative incentives for advancement of productivity and efficiency, this subject is too broad and deep to treat fully here. A few of the important key points for a general orientation may, however, be mentioned.

Agriculture is a biological industry that must utilize the given surface of the earth as it lies. Neither topography nor climate, nor profile structure nor chemical content of the soil can be changed or affected except within close boundaries. The same may be said for the biological rhythm of production, such as the life span of animals or plants, the seasonal determination of a crop year. These facts alone have far-reaching effects upon the management and economic leeway in the utilization of the resources of soil fertility and solar energy.

Agriculture may be defined as the art of closest adaptation of the methods and aims of plant production to the natural and economic environment. Being bound so crucially to extensive space and to a biological time schedule, agriculture is, by and large, unable to create the conditions that are so typically responsible for the creation of large plant units in industry. Since the cultivation of the soil requires continual locomotion of tools and implements; since the men, the machinery, the implements and the sources of traction power must be fed, rested, serviced, or repaired, it is not sensible to extend the area to be covered by one machine too large or to build bigger power and machine units. On oversized tracts of land broken-down machinery virtually requires search by airplane. Terrain, weather, and extension of the cultivated area very often defy central supervision as a controlling factor of efficiency. Compared with supervision by fore-

men and overseers, the personal interest and initiative of the worker proves in most instances far superior. Due to a variety of technical and economic reasons, it is in the longer run most remunerative to diversify production rather than to specialize in one or two products. A few tree crops and truck crops make an exception under certain conditions. The inevitable output of by-products with no market value or transportability, the necessity to convert low-cost products into ones of higher value per unit of weight in order to reach distant markets, and the demand and profitable price for various animal products make it, under many circumstances, obligatory to combine animal husbandry with crop cultivation. Thus the introduction of the revolutionary industrial procedure of cross-sectional division of labor, i. e., the dissecting of one man's diversified performances in the production of one commodity into a number of partial movements executed by specialized workers, is prohibited. Only in some cases such as a specialized orchard or truck crop and in some auxiliary industries such as packing houses is it possible to introduce the conveyor belt and to split the work process.

Farming in smaller units with diversified types of production and without supervision requires the management in addition to the performance of labor. It therefore presupposes a certain degree of initiative, skills, and intelligence, as well as a willingness to take a risk and to stand on one's own merits. As long as it is desired to obtain the best return from land and capital under the management of competent family farmers, units of land should conform to the full utilization of the available manpower. If, on the other hand, the problem is stated as the method to make the best agricultural use of people unable to manage themselves or productive resources, the large-scale farm enterprise gains in importance. It permits the utilization of one good manager in combination with a large number of hired workers who can do useful work only under management and command. In such circumstances it is necessary to choose a type of farming which requires the least amount of those capacities in which uneducated and unskilled gang laborers are deficient. Theoretically it would still seem possible to distribute these workers as single farm hands among family farmers. Yet, in that case, a certain minimum gift of circumspection, self-management, and reliability is imperative, and this minimum is much higher than in the case of large-scale farming with the use of gang labor.

The domain of the family farm embraces the husbandry of animals such as horses, cows, barn-fed cattle, pigs, and poultry. Sheep and grazing meat cattle are exceptions, for they adapt themselves better to large-scale farms and hired labor. Under all intensive forms of animal husbandry, the old proverb holds: the farmer's eye makes his livestock fat. When it comes to efficient, low-cost production, no substitute has ever been discovered for the personal devotion and interest of the husbandman in his livestock year in and year out.

Quite aside from what has been said about its place in production, the large-scale farm enterprise operating with hired labor has undeniable advantages over the family farm—so long as the latter are not prepared to overcome this handicap. Large-scale farms can operate on a large scale in the market. They can sell their produce and buy their needs at wholesale. They can gain twice by selling in carload or wholesale lots at better prices than small parcels will fetch and by buying their needs again at wholesale prices. Moreover, large-scale farm enterprises can afford better research, information, technical advisory counsel and equipment than the type usually available to family farmers. This disparity has been considerably reduced, however, as the different nations began to pass legislation in favor of co-operative associations. That movement began as far back as the eighties of the last century, and today every country in the world not only has this form of commercial enterprise, but each has bestowed upon it special tax privileges in order to establish equal opportunity in business for small producers. When farmers learn to make intelligent use of this institution, they will actually overcome the handicap of smaller volume of business and will attain equal rank with large-scale producers.

Co-operative associations are capable of much greater accomplishment than simply solving the problem of doing business in large volume. They are an excellent tool to break any monopoly position in the trade as well as the processing of agricultural products and can harness a family farm system with a superstructure of up-to-date auxiliary industries (such as packing houses, creameries, dehydrating plants, fertilizer and feed plants) under farmer self-government. Perhaps the greatest contribution toward the advancement of agriculture among family farmers, which agricultural co-operative associations can make, lies in the promotion of the technical skill, the professional knowledge and training of the members, and in their con-

stant information about the pertinent development and facts in the markets.

The question whether large or small scale production in agriculture is more advantageous, as it is usually posed in public debate, therefore defies a simple, exclusive answer. Indeed, the question must be phrased very elaborately and be combined with a considerable number of presumptions and conditions. If there is a given rural population with little education, very primitive skills and inadequate and outmoded equipment, if the task is simply to produce quickly the maximum amount of grain, dry pulses, or sugar beet at lowest costs, the most appropriate way is to organize labor gangs, to let them work large tracts of land in charge of skilled foremen who in turn work under competent managers. This was essentially the solution of the Middle Ages with its static concept of a stable class and caste society—the feudal agricultural estate under the manorial system. It is also the solution of a purely materialistic concept of the political economy whose goal is to advance efficiency in agricultural production rapidly through technical organization and by managing unskilled workers as such. Temporarily it will make the best of conditions which are unfortunate and deplorable from many angles. The feudal landlords—in the Middle Ages as well as today—have claimed that this is the only solution, since it is hopeless as well as undesirable to try to educate farm workers to be farmers and to manage the utilization of land themselves. This aristocratic and cynical philosophy has become unpopular in the western world, though it is by no means as dead as the American public seems to assume. Large parts of the world, including parts of the Western Hemisphere, are under its influence still. Being a short cut to production efficiency it flouts the great promise for social and political progress that the longer road via education and training holds out.

But how good really is the foundation of the prevailing conviction in the western world that the feudal farming principle is really undesirable and how well understood is the real political and social problem of what constitutes the good rural society? How well is this grasped in the United States, the world's greatest democracy?

As did all the other events in Soviet Russia the experiment of compulsory collectivization of agriculture has stirred the imagination of the American urban public profoundly. At long last, the intellectual observers felt, the same principles which have carried the "industrial

revolution" forward to the heights of the machine age were being applied to the residual sector of agriculture. Finally real efficiency and modern technology would enter farming. Such belief was supported by the widespread idolatry of bigness as the supposedly exclusive condition for efficiency and low cost.

Agricultural collectivization appealed to agricultural laymen from another angle too. Since collectivization was the result of centralized state planning, all those who accuse private enterprise of being managerially inefficient saw collectivized farming as the superior form of organization.

People of these economic convictions naturally were favorably impressed also by the replacement of private ownership in land and in other means of production by public ownership. This superficial enthusiasm for a policy adopted in Russia under most trying circumstances and in the midst of a painful and heroic effort to condense into one generation what had elsewhere absorbed three or four completely ignored the several decades of struggle waged in the socialist parties in Europe. This debate led to a split within the parties, and two doctrines emerged, one favoring the breaking up of large estates and strengthening of family farms, the other believing in the superiority of the large-scale enterprise because it "yields the larger product from the same input of labor."⁷ This still unsolved schism ultimately prevented any radical action of the socialists in agricultural policy.

In Chapter III the motives for collectivization in Russia were interpreted and the remarkable transition in the constitution of the kolkhoz tending to re-establish more private property and greater stimulation of private initiative was demonstrated. Collectivization in Russia meant, largely, the recognition of the fact that raising family farms to higher productivity required decades of tremendous efforts toward education and reform. Without the aid of foreign capital, industrialization and the political program itself would have been in constant jeopardy. Hence collectivization was the price paid for the spasmodic effort to remold an agrarian nation in only three five-year plans into a modern industrial power. No one in Soviet Russia ever did claim that collectivization was an effort to create a prosperous rural society enjoying personal freedom, well-being, and security.

A belief in the development of all the people to better performance as members of society, giving them an optimum of freedom, independ-

⁷ Karl Kautsky, *Die Sozialisierung der Landwirtschaft* (Berlin, 1921), p. 48.

ence, and living comfort and high economic productivity, does not permit the consideration of collective farming as a wholesale answer to the problem of what form the agricultural enterprise might best assume. Political democracy cannot be indifferent to living and working conditions, the dignity of existence, and the satisfactions that derive from work well done. Intelligent students of welfare economics are convinced that low production costs or high output per man-hour are not the sole criteria of the acceptability of industrial goods, and that slave labor or filthy sweat-shop conditions make such goods undesirable.

This is sound economics and might well be applied to agriculture. A rural society can offer its farm population much greater satisfaction and lift itself to a higher level if most of the farmers have that freedom of management which private property gives. They can more fully earn the benefits from their own skill, initiative, and effort, than if they are landless rural proletarians who obey the commands of foremen or managers and merely play the role of a certain measure of manpower exchanged for a wage, or members of a collective farm with few opportunities to utilize their individual abilities. So far, it has not yet been proved that given equal opportunity family farming could be beaten in the costs of production and in technical and economic performance by large-scale farms, no matter whether these are privately owned and managed estates, corporations, or collective farms. Equal opportunity does comprise a variety of conditions: educational facilities, public research and consulting services, credit facilities, equally good land and the opportunity to adjust the size and layout of farms according to the requirements of efficient work and use of machinery. So far, the highest technical and social performance of every sort of agricultural production, even with its many disadvantages and the discriminations against it, have been accomplished, under the whole range of climatic conditions, by family farms. This holds for the most labor-intensive farming in Europe as it does for the labor-extensive farming in the United States and for tropical agriculture as well as farming in the temperate zones. Nowhere in the world have the most efficient and profitable large-scale farm enterprises ever seen fit or been able to provide their laborers with housing facilities, real income or general amenities from their rural existence similar to those provided by millions of family farms in Europe or the United States. This judgment does not suggest that all family farms

are more productive and provide better living conditions than all large-scale farms. In fact, there are large areas, some of them even in the most populated countries, where the family farmer lives in utmost misery and has very limited facilities, while a small number of large estates or plantations operate with much greater yields and with better living conditions for their laborers. These conditions are, alas, the result of a social and economic monopoly by the large-scale farms which does not give the family farmers anything resembling equal opportunity, or they are the result at least of the absence of good government and its services to the people.

To overcome this sad state of affairs by the sledge-hammer method of enforced collectivization seems unjustifiable not only because of the abject cruelty and misery which the process involves but even more because it can ultimately accomplish only a partial solution. It falls far short of what a social reform can achieve, developing first of all the human resources and with them the material ones. We warn most solemnly against toying with the idea of destroying the existing rural structure of family farms in any one of the five continents by radical experiments. In Europe, for example, it would turn the clock back and establish again, under different aspects, the large estates that bloody revolutions for the most part have gradually abolished. To destroy the decentralized family farm structure requires little else than brute political determination and the use of physical violence. To rebuild it would take a century if it could be accomplished at all.

Nations neither need nor want to collectivize agriculture in their territories. Such a course could only be imposed upon them by the dictate of a minority with the assistance of a foreign power. We therefore rule this alternative out in our consideration of the reconstruction of agriculture. Indeed, we expect that as Soviet Russia enjoys further success with her industrialization, overcomes the era of scarcity of consumers' goods and curtailed consumption, and is completely consolidated politically, she will continue on her present road to more freedom and greater leeway for private initiative. It would be quite in line with this course if she should further transform the collective farm system so that it would widen opportunities for the farmyard and household.

If then, the actual and potential social and economic performance of family farming is beyond dispute, would it be desirable to prohibit altogether the existence of large-scale operation? Such a rigid policy

would probably be unwise, and neither in the United States, Great Britain nor elsewhere in the British Empire would such a course have a chance of acceptance. An agricultural system with family-sized farm units throughout, with well-educated, competent and alert farmers, with adequate mechanical equipment aided by a system of co-operative buying and selling and processing associations would, in the end, be superior not only to a predominantly large-scale system but also to a mixture of large-scale and family farms.

But the attainment of this ideal state requires much time and great educational and other social progress. In the meantime, there are large numbers of people who by inheritance and environment have neither the inclination nor the capacity efficiently to manage land and capital resources nor even their own manpower. Education and training, even if applied by public initiative and pressure, would never lift these people to the status of responsible farm operators.

At the same time their capacity to work must be utilized. Society even owes them an opportunity to work and earn a living, but it would be wasteful to put valuable resources of capital into their hands. This residual labor supply that does not respond to education or training need not necessarily be very large, nor should public efforts be spared to give opportunity for improvement of its ability to work efficiently.

This labor supply must be used. Agriculture is one of the chief occupations where this type of labor can be utilized to advantage. It should be organized into field-working crews under constant supervision. A certain proportion of these people cannot be employed in industry; therefore, the public will ultimately have to decide whether to use them as farm labor on large-scale enterprises, to keep them institutionalized, or to maintain them perpetually on relief.

From the standpoint of individual self-respect and a normal position in society, the far better course would be to work them on large-scale farms. If public policy should favor a system of well-to-do family farms over large-scale "factory" farming, public policy would have to establish fair labor standards in order to eliminate sweat wages and other defective labor conditions which put "factory farms" in a position to squeeze family farms into depression or out of business. Minimum requirements for sanitary housing and a wage floor for hired farm labor on family farms are two chief means of guarding against the unfair competition exerted by large-scale enterprises. They

are especially necessary where foreign migratory labor is available.

To avoid a prohibitive or discriminatory policy against large-scale farming seems particularly justified in countries where land is abundant and relatively cheap but labor always scarce, and where the non-agricultural sectors of the economy exert a sufficient suction to absorb surplus labor from these farms into other gainful employment.

The situation is different in countries where land is scarce, where there is demand for farm land and therefore land prices are high in view of insufficient expansion of industries and a surplus of farm labor. There, large-scale farms keep land in forms of utilization which require little labor but much capital, and yield per acre less produce than if the more labor-intensive family farm method were applied. In other words, the large estates prohibit the higher labor input per acre which would result in products with a higher "value-added." Family farms operating with three or five times the livestock per acre and producing fluid milk, cheese, eggs, or vegetables, convert more labor into food calories, minerals, and vitamins than does an estate growing only grain and potatoes on the same acreage. In countries with overpopulated farms, the use of residual gang-labor on the large estates keeps many highly qualified workers unemployed because the uneducated, unskilled men and women are cheap and just good enough to be put in charge of overseers. The large estate does not take up the slack in the farm business created by family farms but it exerts undue pressure upon them, usually in combination with the use of political influence and privilege and a variety of monopolistic devices. More serious is the fact that the large estates divert technological and economic research and teaching toward the specific problems of large-scale farming and away from the more intricate ones applicable to family farms.

These reasons combined lead to the recommendation that all European countries adopt policies wherein all farms whose manpower is predominantly supplied by hired labor will be converted into family farms.

The Problem of the Perseverance of Agrarian Feudalism in Germany, Hungary, Poland, and Spain

The foregoing discussion has passed over a peculiarly important historical and political phenomenon. Large-scale farms or estates

emerged from the original fief held as the inherited property of the landed nobility in the preindustrial era. Originally they were settled by bonded peasants and serfs who paid rent or land taxes by cultivating the manorial land for the landlords. Before and during the emancipation of these serfs and other dependent peasants, a process launched under the influence of the last century's era of enlightenment and liberalism, the landed nobility managed to pervert the legislation and evicted hundreds of thousands of these small farmers. These outcasts migrated to the cities, many of them forming the proletariat in the slums of early industrial centers. Only gradually and selectively did they begin to climb as industries prospered through their labor. The owners of large estates sold large tracts of land to wealthy sons of the bourgeoisie, whereby the class of large-scale landowners expanded. In the early decades of the last century high wool prices made sheep grazing (the most extensive form of land utilization requiring the least amount of human labor) most profitable. With half or more of the land in fallow and the rest in grain the management of large estates became a leisurely occupation yielding sufficient resources to maintain a level of living up to the standards of the leading caste, the landed aristocracy. The income from these estates was good as long as the English market absorbed the wool and grain exports from the Continent and the rising urban population boosted domestic prices of farm products. Later, when overseas competition began to be felt, the landed aristocracy succeeded in keeping the chief cost factors in line with their income needs. Wages were kept low by importing foreign labor. Estates were practically tax-exempt. Tariffs kept the prices of grain at profitable levels. These cost and income items of wages, taxes, and grain prices comprised the cornerstones of the economic position of the large estates, while the class system for elections and the general code of rural law anchored the political prerogatives of their owners.

The landed nobility and their bourgeois associates derived from their estates more than their income. Their social position and their political influence rested upon their title to the once feudal land. Indeed, the feudal relation persisted in that this caste was at the very top of the social hierarchy and was part of the inner circle around the king. Their warm place under the royal sun entitled them to leading positions in the army, whose higher officer corps was largely a dependency of the landed noble caste. The sons of these families

also had better opportunities than anyone else to fill positions in the diplomatic service and the most influential positions in the higher civil service. Under the constitutional monarchy, the close kinship and community of political and economic interest between the large estate caste and the "smoke-stack barons" in the heavy industries required a strong political representation in the parliament. Again the landed nobility had first choice of key positions in the parliament.

The reader may recognize this as a description of the Prussian Junker caste and its place in the Prussian and German state as it exists to this day in a somewhat modified form. But Prussia is by no means the only country where this anachronism has existed for so long. In the Austro-Hungarian monarchy an identical set of conditions prevailed until 1919. In Hungary they survived the revolutions and reforms after World War I. In Austria and Czechoslovakia the agrarian reform under the republics did away with the caste. In Poland, under the dictatorial regime of Marshal Pilsudsky, large estates remained intact and the manorial caste retained its influence, although reform, tax, and depression left it financially weaker than ever. In all the other parts of eastern and southeastern Europe, the great sweep of agrarian reforms after World War I abolished or reduced the large estates to insignificance. In Italy, fascism carried out various reforms to a similar end. In Spain, on the other hand, the agrarian reform, barely under way, was stopped by the victory of Franco in Spain's civil war. Today Spain is the one country in Europe having the most typical neofeudal distribution of land, where thousands of *latifundia* or manorial estates predominate in the central provinces and where about one million midget and small farms prevail elsewhere.

In Germany, Poland, Hungary, and Spain, the long overdue agrarian reform is a task of grave urgency for the future. In all four, the continuation of the remnants of a feudal social and economic order are, incredible as this may seem to non-Europeans, the most nefarious political blocks of resistance to fair play and democratic order.

These 40,000-odd large estates are much more a political than an economic problem. To pass this land into the hands of family farmers and to integrate the new units into the more timely fabric of land utilization and rural settlement is a task that can be accomplished without making even a temporary dent in the national food output.

To avoid curtailment of national food production is merely a

matter of administrative competence and action, but to eliminate the political influence of the manorial caste requires astute and resourceful statesmanship. Without it, public appropriation of the landed estate under eminent domain and its resale to family farmers merely fosters new conspiracies of the displaced caste for their restoration. After all, it was when the foreclosure and resettlement of their bankrupt estates was imminent that the Prussian Junkers overthrew the Weimar Republic by helping the nazis to seize the power and forcing Chancellor Brüning's dismissal.

The elimination of the manorial caste in these four countries is one of the prerequisites for protecting the future peace. Militant nationalism and the craving for greater power and glory by military adventures live in the ancient stone walls and the moss-covered stepping stones of the manors. The spirit of a patriarchal community with blue-blooded lords and their spouses and subservient lowly serfs, perverted by being transferred into the environment of the twentieth century, is so powerfully alive in these insular remnants of earlier epochs that in a short while it assimilates and absorbs outsiders. The rustic world of the knights is by no means bare of charm and attractive contrasts to the urban world of the restless machine age. This open air profession has its always interesting problems of managing crews of workers and on the more traditional estates teams of horses, or on the more modern ones sets of large-scale power machinery, with the never ending opportunity for improving the farm technology and labor efficiency, and a refreshing windfall of horsemanship, hunting and other outdoor sports. Hence it has a great appeal to many a man far beyond the ranks of the Junkers. Industrialists and wealthy urban people who can afford it frequently buy such estates for their sons or they run them for their own enjoyment with professional managers as absentee owners. Interestingly enough, all these people are usually very soon absorbed into the mores and the economic and political philosophy of the Junkers.

Agriculturally, the task of abolishing these social and political petrifactions requires, in addition, a strategy of common sense and vigilant realism. It requires sufficient capital to start the initial equipment, the attraction and selection of an élite of settlers from the best family farmers. The political end of the task concerns essentially the treatment of the displaced families of the former large estate owners and

managers. Our belief in the Christian ethics underlying the political doctrine of western democracy, particularly in the sacred rights of the individual and the family, excludes a priori any flirtation with ideas of liquidating social groups for the sake of social, political, or economic reform. The British commonwealth has made a worthy historical record for continual reform avoiding the most clumsy and costly of all forms of adjustment, bloody revolution and civil war with its orgies of man's beastliest instincts, the breach of continuity and the hiatus that follows. In the case of the Junkers, there is no evidence that they cannot be assimilated into a democratic society. Nor can it be said with reason that the Prussian Junkers are a unique species. It is well to remember that Great Britain still has its landed gentry and that the United States had its own Junker caste, the plantation aristocracy of the South. Neither of these two English-speaking nations "liquidated," i. e., butchered, its Junkers and in neither one has democracy been undermined by the equivalent caste of their "Junkers." Both nations, after abolishing caste and class prerogatives, have absorbed these families into modern society where they contribute splendidly their share to the common weal just as any other responsible citizen irrespective of descent, title, or name.

There is no reason to assume that a similar evolution cannot be brought about by a determined policy toward real democracy in the four countries, especially in Germany. The Weimar Republic, its democratic leaders and parties, lost the case against the Junkers because it lacked judgment about their political abilities and aims, because of indecision and indetermination, and ultimately because it did not have the courage to break the threat of violence by the use of violence under the law. This sad and inglorious loss of the case of agrarian reform by default certainly does not of itself condemn to defeat another effort toward reform in German agriculture. Once their military power is broken, their estates abolished, and their privileges in the diplomatic and civil services eliminated, the Junkers will fade from the picture as a powerful caste, though not as individuals under competition, unless another republican government should desert that eternal vigilance which Abraham Lincoln called the safeguard of democracy.

Industrial Protectionism and Autarchy as Barriers to the Full Utilization of Agricultural Resources, with Special Reference to Europe

In public discussion of the merits and faults of trade barriers, the chief arguments concern the effects of agricultural protection upon industries and of industrial protection upon markets for agricultural exports, and related conditions. There is an entirely different side to it, however, one frequently ignored even by the protagonists of freer trade, which may embarrass many of them in so far as they think in terms of an expansion of the European export market for overseas farmers.

The erection of barriers to the exchange of agricultural goods between nations has not only hampered trade, but has seriously hindered the full utilization of existing agricultural resources. The economic "Balkanization" of the European continent by tariff walls, and the maintenance of 27 different markets has forced agriculture in those areas to draw on existing resources for food and fiber production only to the extent that the domestic market can absorb most of the produce, allowing for small amounts to be moved over tariff walls into foreign markets. Since the domestic demand for foods dictated what should be produced, and since the protected price structure gave strongest leverage to this dictate, farmers had to produce to a larger extent in opposition to the opportunities offered by climate, soil, and topography. Instead of using the major part of the useful land in Bulgaria, Yugoslavia, and Greece for fruit orchards, tobacco culture, and oilseeds to supply northern countries where yields are meager and costs are high, much of this ideal fruit, tobacco, and oilseed land is used to produce exactly those products which elsewhere in Europe can be produced much more efficiently. As a result, farm income is lowered in all countries, and national diets in many cases are deprived of the variety of foods they might otherwise obtain. Diversity of climates, topography, and soils therefore becomes a great asset as soon as a common market can be supplied. Self-supporting Finland is bound to a very limited diet; so is a self-supporting Mediterranean country. As soon as both pool their agricultural production, they can divide the labor, expand the crops where they grow best, enjoy a more variegated bill of fare, and lower food costs at the same time. This simply applies the principle of comparative advantage to

agriculture under different natural and economic conditions. To be sure, one can grow bananas, oranges, and pineapples even in Baltic countries. During the Renaissance the princes all had their hothouses for grapes, oranges, and lemons, and in the botanical gardens of northern European cities bananas are ripening today. Naturally the costs of growing these fruits are such that only a few of the wealthiest people can afford to eat the very limited supply.

As an agricultural unit, the European Continent has a most amazing range of climate, soil, and topographical resources. If they could be harnessed for optimum production for the entire European market, a much greater division of labor between climatic zones would take place than exists today. How great is the comparative advantage of special zones in producing at low cost, in better quality or in specific seasons, is most forcefully illustrated by the fact that this division of labor has taken place to some extent despite the obstacles raised against it. These obstacles are not always import duties alone. Railroad freight tariffs, international truck regulations and packing and container regulations have been used in Europe as supplementary tools of discrimination against foreign goods. Railroad and electric power rates are by nature arbitrary systems of charging for services, with some consideration of costs involved in specific services. Whatever policy is adopted in the construction of the freight tariff, the advantage is always given to the domestic rather than the foreign shipper. Moreover, the freight service made available for goods in transit from other countries may be so poor that the regular shipment of perishables becomes impossible under any circumstances, particularly when there are no refrigerator cars. In the case of trucking, the condition of the roads, the nature and number of gasoline and service stations, border formalities, license requirements for trucks and drivers offer many opportunities to thwart the movement of food from one country to another. Even in the United States where prosperous free trade operates widely, many such nefarious devices against interstate traffic and trade have crept in as a result of short-sighted economic regionalism identical with Europe's economic nationalism.

The opponents of an international division of labor in the production of food, feed, and fibers used to suggest that all policies toward that end would financially ruin millions of European family farms and reduce the farmers to abject misery and poverty. That argument in-

variably assumes that a policy of freer exchange of farm products would be introduced by nothing short of the abrupt abolition of all duties and all other artificial obstacles to the international movement of food. And this absurd assumption is made deliberately to ridicule the policy thus condemned. No responsible statesman sponsoring a policy of freer exchange of goods would be naïve enough to attack the problem with such cruel clumsiness. It is universally known that freer trade must be applied by slow degrees. Trade barriers must be lowered bit by bit, accompanied by an energetic monetary and tax policy to assist all industries and especially agricultural branches of the economy in adjusting themselves to the price and market situations created by the adoption of a freer trade program. The essence of all economic enterprise is to continually adjust to change; lowering of tariffs, therefore, imposes no abnormality upon the economic enterprise. The change to freer trade would become unreasonable and impose unbearable hardship only if the necessary adjustments, all requiring time to be efficient, were summarily telescoped into a few months or a year. The exceedingly slow turnover on farms and the heavy long-term investment as well as the large capital required for all drastic changes in the type of production demand an adjustment period of as much as four or five years. In that length of time tariffs can gradually be lowered, following a program which farmers can know in advance, whose application they can watch, and whose regulations they can observe with some understanding and vigilance.

Another group of arguments commonly advanced in Europe against freer trade in agricultural products asserts that even if mass bankruptcy of farmers could be avoided, general depression of their living standards would ensue. The argument further charges that a change from the present mixed farming type of agriculture with year-round distribution of work and a better distribution of the risk of changes in commodity prices to a mono- or duo-cultural system of specialized crops would bring with it all the evils of full commercialization, even affecting the purchase of most of the farmer's food.

These claims are groundless, however, as historical analogy as well as plain reasoning ably reveals. The two finest examples of a farmer's "happy valley," of countries where agricultural production technique is at its contemporary summit as to equipment, management, output per unit of land, efficiency of labor, quality of product and reduction of costs, and, where, at the same time a most remarkable degree of

culture and the art of decent living have been attained, are Holland and Denmark. Each country accomplished this enviable state during a long period of free trade. Their farmers learned not only to discover the fields of production in which they had the best opportunity to compete successfully with the farmers of the world, but they also were able to develop their own abilities, their agricultural production and marketing plants to almost functional perfection. When the agricultural protectionists were confronted with this indisputable record of accomplishment, they used to counter with the objection that only the Danes and the Dutch could do it because they had the advantage of the British market close at hand to which to send their goods. But this objection proves our point, for if in all the other European countries the markets for farm products were to be gradually opened as part of a general freer trade policy for all goods, all farmers would then have more opportunities to benefit from higher production. Division of labor between nations would not favor just those where soil and climate were best. Climate and soil alone can produce nothing at all. Comparative advantage rests upon the interplay of a host of factors which all contribute to the competitive grade of quality and the cost of the product. Frequently greater skill in farming overcompensates poor soils or unfavorable climatic conditions. Greater skill, better research, better equipment, and more intelligent marketing can overcome ordinarily prohibitive handicaps. Climate and soil alone, therefore, will never dictate the ultimate location of types of production. A given location may well be labor-oriented, rather than determined by natural resources only.

The Danish and Dutch farmers disprove the claim that free trade fosters monocultures. Danish farmers produce to a considerable extent all the small grains, although they normally import a great deal of them from wherever they can be bought cheaply. In both countries farming is as diversified as it can be, the labor load ideally distributed throughout the year.

Thus the historical test with not only freer trade but full-fledged free trade has not supplied any evidence for the validity of any arguments for protectionism. Indeed, all the evidence points in the other direction. It is one of the neatest tricks in public debate, used often unwittingly by the protectionists, to imply that the producers against whom the trade barriers have been erected possess unlimited capacity in production and resources and are by nature so superior

in production techniques or so inferior in their expectation of income that it is unfair to suggest that protected farmers compete with them. If this were true, it would indicate only how much the welfare of the world's inhabitants could be advanced by permitting these economic supermen to supply the hopelessly inferior people, and how much wealth is lost by protecting the least qualified producers. As usual, when huge bonanzas supposedly lying around are once unearthed, the suspicion of a great illusion is justified. While there are considerable differentials in human, natural, and technical resources for food and fiber production, they are all differentials in degree, and rarely if anywhere can unlimited expansion exist without changing cost items, and with them the level on which competition has to be waged.

We therefore conclude that opening Europe and the British Isles to freer foreign trade with the Continent and the world will render fully accessible and develop the great resources of special human skills in agricultural and horticultural production. Freer trade will also lead to better utilization of natural resources such as climates, soils, and topographies, and in general it will render accessible the dominant economic resources, which consist of the wide differential between economic conditions in various parts of Europe.

Intra-Continental Traffic as a Means of Lowering Costs of Agricultural Production

Traffic barriers have a similar effect upon the development of agriculture as have barriers to international trade. What full development of transport resources means in rendering economically accessible the dormant resources of low-cost production cannot better be illustrated than by a few references to the history of agriculture in the United States.

When the American railway companies were pushing their trunk lines west to the Pacific Coast, the main business they counted on was the shipping of agricultural products. Under public land grants they sold land to settlers and populated the land with farmers who soon would begin to ship their produce. At the same time the railroads maintained agricultural promoting offices—some still do.

A new railway invariably creates new opportunities to produce different products than before on farm land, because it reduces the deduction for transportation charges from the price of farm products

obtained in the market. In other words, the price obtainable at the farm is increased, while the transportation charges added to the goods the farmer needs from distant metropolitan areas are reduced. By this process, distant areas with good natural farming conditions and low-priced land are virtually moved next door to the markets.

The next greatest single move toward opening the remote areas of the United States to farming was the construction of hard-surfaced federal and state all-weather highways from coast to coast and from Canada to the Gulf of Mexico. Significantly, the federal agency charged with the administration of the funds and of this program was the United States Department of Agriculture. In combination with the creation of inexpensive reliable motor trucks and nationwide systems of gasoline and repair stations, these highways supplied undreamed-of transportation services to the majority of the 6,000,000 farms. The farmers could begin to reorganize their production in line with prices that would become available and the markets that were thus being opened.

No such evolution has yet taken place in most of Europe. Denmark and Holland built good modern highways largely during and after World War I from the considerable profits they derived from their business as neutrals. Both imported American motor cars and had cheap gasoline. France had fewer new highways, but was the most motorized country in Europe, and enjoyed the still admirably useful military highways Napoleon had built straight to the Russian border. Switzerland has an excellent highway system. In Germany, country roads in the lowlands were very poor, and even the main highways were not serviceable for heavy trucks. But Hitler's military *Reichs-Autobahnen* have created a network of superhighways, but not with agricultural development in mind. In the highly industrialized Germany before World War II, thousands of farms only 50 miles away from the Berlin market could not produce fluid milk or vegetables effectively because the connecting roads from the farms to the highway were so poor that in bad weather travel to the main roads was impossible. If the Continent were to be opened for trucking, the absurd protective tariff system favoring small automobile factories, under the guise of national defense, would have to be abandoned. It would, in turn, be a great boon to Europe's farmers. Construction of good international highways from Brest to Brăila and from Copenhagen to Istanbul can be undertaken whenever the idea of military security of

each nation for itself is discarded. In an age of roaring squadrons of several thousand bombers capable of demolishing cities on the Continent from bases far outside it, this narrow concept of national defense is nothing short of childish. Who can dare defend as a military necessity the maintenance of a border stretch void of highways, clogged by artificial swamps, as existed between Germany and Poland before this war? There is no sane military reason for such conditions to be created. There are fundamental economic reasons for developing to their utmost all highways and farm roads, for they are the true arteries and veins of traffic, and traffic is the circulating system of a modern economy anywhere in the world.

Realistically, farmers recognize the need for practical and efficient transportation systems, and are not always too particular by what means they are attained. Two economists, visiting in the cane bayou country of Louisiana, came upon a farmer who spoke to them in glowing terms of Huey Long, then dead but a few years. The economists were amazed that anything good could have come from such a corrupt regime. The farmer explained that it did not matter to him that the roads were built by graft. The point was that the roads were built—roads for which he and his forebears had been paying taxes in vain. Four horses could scarcely move half a ton of cane to the boat landing from his 80 acres of deep black muck soil. And after it reached the boat, his produce had to be carried to the sugar factory 15 miles away. The concrete highway meant to the farmer that he could hire a truck to pick up 10 tons of cane at his fields and take it right to the factory. More than that, the man's farm had become a modern business instead of an isolated, unprofitable, backwoods enterprise.

CHAPTER VIII

The Reconstruction of World Trade as the Basis for a Reconstruction of Agriculture

WE HAVE clarified and defined the principal causes of permanent rural poverty, of agricultural poverty, and of conditions generally unsatisfactory to agriculture. Some of the controversial issues with respect to agricultural policy have been set forth. We can now consider some of the foundations for the reconstruction of world agriculture.

"Reconstruction" implies that when World War II ends it will have destroyed or disrupted vital segments in the structure of world agriculture, and suggests that constructive work toward the restoration of normal productivity will be in order. Earlier discussions have shown that notwithstanding the devastation in eastern Europe, in the aggregate the chief damage to the world's food and fiber economy does not primarily lie in the harm done to production on the farm by acts of warfare. By the policies of the aggressors and the corresponding strategy of defense by the Allies, the world has been blocked off into sealed compartments, thus interrupting communication and exchange of goods and services, and forcing them into new channels. While the British Isles are still being supplied from overseas with about half as much food as before the war, the other great importing area, the Continent, has been cut off and forced to strengthen internal agricultural trade. It is in this realm of intercontinental division of labor that the greatest damage to agriculture has come. The two blockaded Axis areas have not only been cut off from international co-operation in foreign trade, but have by necessity pursued the goal of agricultural autarchy within their realm of conquest. In some war-torn sections the world's farmers live and work as usual behind the blockade, even close to the rubble of cities and factories; in others farming has come back to more normal production in the latter years of the war; while in the liberated areas of Russia active warfare has wrought such grave damage to all buildings and other improvements

on the land that it will take years to undo the systematic destruction.

The majority of national systems of agriculture have been advanced during the war far beyond their former state, while a few have declined in productivity. Yet whatever prosperity exists in some sections of the world, and whatever depression in others, will not simply carry over to the period of peace; the blockades will fall and the war's end will restore the freedom of the seas and the freedom to trade between nations and continents. This structural change in the agricultural world will tend to upset the previous conditions during five or more years of war in most of the countries of the world. Reconstruction is inevitable.

No less than two-thirds of all the people in the world derive their livelihood from agriculture. In some countries of Europe, Asia, and South America, as many as 80 per cent of the people live on farms. In other countries, highly industrialized, the agricultural population represents merely between 15 and 20 per cent of the total population. These proportions indicate how important to the establishment of real peace it will be that rural peoples get their fair share in the improvement in general living conditions, and can participate in cultural and social advancement. Nothing could be a greater disgrace, and nothing constitutes a more mortal danger to the future peace than its beginning with a long, widespread period of depression for the world's farmers. Not only will they exert all the political pressure of which they are capable to obtain the conditions that will give them a fair opportunity to live and work, but if they are frustrated, new hostilities may break out anywhere. Unless the farmers have a voice in the future, they will distort the world's economic policies, and will disseminate political discord as well. Nearly all the world's great revolutions sprang from the distress and dissatisfaction of the agricultural populations.

Fascism, with all its nefarious political philosophy, its brutal institutions and methods, has given the farmer security of prices and market outlets. It could do so because it created artificially a situation of continuous shortage in the markets.

The Criteria of Reconstruction

Reconstruction cannot be aimed at a restoration of a previous status quo, whether that be conditions existing in 1939, in 1929, or in 1910—

14. In any case, the restoration of previous actual conditions is a mistaken notion most easily entertained by men at an age to dwell fondly upon the cherished memories of bygone days; nor does the backward glance clearly recall the real nature of past conditions. To assume that the record of the past years of agricultural history can simply be erased is a dangerous illusion, because it ignores not only the profound changes in experience, psychology, and desires exacted by the events of five years of war, but also the tenacious continuity of earlier social and economic trends which carried straight through the interlude of political tyranny. The restoration of former external conditions will not mean much, if anything, unless new foundations are laid upon which to rebuild.

The economic pursuits and actions of the commonwealth of nations need a new mooring in the reassurance and restitution of the moral principles underlying the welfare of the people. In that sense, restoration and reconstruction are identical, because in the blockaded world these moral foundations have been intentionally despoiled by the totalitarian politics of the tyrants. Yet even in basic principle, restoration cannot mean the mechanical adherence to previous formulae, but envisages a restatement of the true spirit of the law, and the revival of timeless values enriched by historical experience. In 1944 the values implicit in habeas corpus, search and seizure, and due process of law, the sanctity of the life, the home, and the liberty of the individual have acquired a new and more eloquent meaning during this totalitarian war than they had in 1914, 1924, or 1934. The principles are the same, but their value is more precious, because the experience of their suspension, and the methods applied have revealed hitherto unknown depths of barbarism. Many possible solutions for agricultural problems of the postwar period may be technically perfect, and may promise machinelike precision. Yet they will be taboo because they are socially and politically unbearable.

In designing the legal and institutional framework for agriculture in the future there is no need to copy slavishly former patterns. Intelligent reconstruction must make the best use of the experience acquired and of the raw material left when the shooting ends. Certain practical solutions worked out and applied under fascism, though deriving from other mainsprings, will deserve preservation. To restore the pretotalitarian past will be futile, but the "architects" in charge of reconstruction can just as little afford to erase dogmatically every

trace of a period in which the foundation of society was corrupted but one in which the people carried on with their skills, their inventions, and their resources.

It would, for example, be folly not to preserve the technological and organizational progress brought about under fascism in the agriculture of many European countries. Europe's dairy industry has been equipped with better-organized industrial plants in many regions. Agriculture in the Danubian countries has received much modern equipment. Skills, production techniques, farm management methods, seeds and breeds of plants and animals have been carried into the east and southeast. The greatest change in European agriculture under totalitarian rule has been in the thorough organization of the agricultural markets. In spite of the conqueror's selfish intent he could not escape leaving behind some advanced knowledge about the inner mechanics of the market and the appropriate methods for its organization and administration which evolved in the thirties in Holland, Denmark, Switzerland, and Germany has been carried into most of the conquered countries. When the tyranny is broken this knowledge about effective public administration should be preserved, further adapted and developed.

The comprehensive cartelization of agriculture not only served the sinister purposes of the military adventurers. It was at the same time the tyrant's response to the farmer's urgent demand for security and governmental protection against the hazards of price fluctuation. The stability of prices and the guarantee of profitable future prices announced at least one year in advance, and many subsidiary devices, are innovations that American and European farmers alike will probably want to see carried over into the era of peace. To say the least, the farmer's memory of those publicly controlled farm prices will make itself felt in strong political pressure from the farm blocs of many countries. A glance at agricultural planning and public price supports in the United States and Great Britain may place this observation into the proper perspective.

Therefore, condemnation of the system for the sake of condemnation alone is no solution. The only sensible course seems to be to test carefully in each country what specific items of policy, previously installed, are compatible with the general philosophy underlying the policy of reconstruction and the nature of future agricultural relations. Once these things are established, it will become possible to re-

condition agriculture while it is producing and marketing, and in turn possible to avoid the costly experiment of revolution.

Whatever measures are to be taken in behalf of agriculture must be closely integrated into the general economic policy of each country. Ailments in the agricultural sector are frequently symptoms of serious afflictions in the industrial or financial sectors of a whole economy, and the real cure must, in those instances, be sought outside agriculture. The larger the nonagricultural sector of a national system is, the more essential becomes this approach. Even in countries where 80 per cent of all the people derive their livelihood from farming, one of the keys to the improvement of their welfare is the development of markets for farm products at home or abroad, and in the advancement of the industrial and commercial segments of their economies.

The Economic Foundations of Political Democracy

One of the central presuppositions underlying a belief in the possibility of sustained economic progress is the conviction that political democracy requires an expansive economy. If a society should resign itself to and accept the impossibility of gradually increasing the aggregate social product of goods and services rendered, it would either have to accept the existing unequal economic position of social groups or would have to resort to the redistribution of the limited social product.

The first solution frustrates democracy because it leads to the entrenchment of a stable social hierarchy and does not offer equal opportunity so long as private property is kept intact. Planned redistribution of a limited social product eventually involves the transfer of all economic decisions and the power of action into the hands of government. The latter solution is typical for socialist or fascist totalitarian states, and not only denies the principle of political democracy, but sooner or later means a quest for economic betterment through military aggression.

Individual freedom can much better be afforded, and the issue of its curtailment by the dictate of economic need can much more easily be avoided, if and as the economic system is allowed to expand. Economic expansion means a high ratio of gainful employment—jobs for young men and women as they come of working age; freedom to

move from job to job; and freedom to be promoted in view of accomplishment. In general, expansion means the participation in improving wealth on the part of those who need and deserve it most. It holds out a promise of social justice for those who are not mentally or physically disabled, and keeps the functions of the state within the limits of regulating, guiding, and protecting the economic activities of the citizens against foul play.

Economic expansion is accompanied by an improvement in the efficiency of human labor and by the use of man's inventive genius and his ability to organize. It is limitless, unless one thinks in the primitive terms of the consumption of some specific physical goods. Yet even the improved productivity of human toil in physical goods for immediate consumption expands the opportunity for creating greater supplies for future consumption, and with it stability and security, but even to a greater extent the opportunity for shifting more human energy to the performance of professional services, such as medical and dental aid, and to the "production" of intangibles. Those intangibles include the satisfaction of needs and desires other than those for food, clothing, and shelter. More human energy may thus be released for the improvement of educational, recreational, artistic, spiritual, and cultural standards.

Those who consider economic expansion as the perversion of a decent and civilized society usually point out that expansion leads merely to more gadgets, and as a result of their efficient production, to more enervating work and more senseless uses of leisure time. It is true that a misoriented expansion and purely narrow-minded materialistic policies may have all these deplorable results; but it is a fallacy to lay the blame on the process of economic expansion, when a lack of intelligence and vision on the part of the leadership in the body politic is responsible. If human labor is to become more efficient in the production of physical goods, and if more time and energy are to become available for the satisfaction of other, particularly cultural wants, it is the task of education and intellectual leadership to reorient the allocation of human energies to the greater appreciation and greater production of the intangibles.

The rate of expansion may be slow or fast; rarely will it be steady. There will be periods of adjustment, when expansion in some fields will be temporarily arrested. It will be arrested for longer periods when ill-conceived policies thwart the investment of capital or other

essential functions which together make up the phenomenon of expansion. But within the scope of historical reality there is no such problem as a preordained limit to economic expansion. In the machine age, when industrial production is at its height, humanity's chief problem is the same as it was eons ago—how poverty can be diminished, and how may the limited resources of the earth be utilized with thrift and intelligence in order to create more goods and services for the needs of man.

In an article on "The Social Aspects of a Public Investment Policy," D. Christie Tait wrote as follows: ¹

It is sometimes maintained that we have solved the problem of production and that all we need consider now is how to distribute equitably the enormous volume of goods we produce. Nothing could be further from the truth. According to a recent estimate, 81 per cent of the world's population have an average real income of less than the equivalent of \$10 per week per breadwinner, and about 53 per cent less than \$4 per week per breadwinner. Only in Argentina, Australia, Canada, Great Britain, New Zealand, Switzerland, and the United States, which contain between them about 10 per cent of the world's population, is the real income \$20 per week per breadwinner or more. In the U. S., for example, the highest level of real income per breadwinner prior to the war was about \$32 per week in 1929, and even if all industries had been working at full practical capacity, involving extensive reorganization, the corresponding figure would not have exceeded \$44 per week.

Agriculture in an Expanding Economy

Economic expansion requires a shrinkage of the agricultural sector of the economic system. The proportion of people gainfully employed in the production of food and fibers must diminish in order to make possible improvements in the income and wealth of nations. All agricultural fundamentalists, romanticists, and "agrarianists" deny this axiomatic truth, but do so contrary to practical reason and logic. Their arguments are not woven into a pattern of constructive suggestions that could be assimilated into a dynamic economy, but are chiefly complaints and criticism of the most unsatisfactory conditions created by the industrial revolution, with the assumption that economic expansion must inevitably lead to disgraceful conditions. Often enough, the abhorrence of the ghastly by-products of the machine age is fully justified. However, in looking for a more constructive

¹ *International Labor Review*, January 1944, XLIX, 1, p. 3.

solution, agrarianists suggest an alternative that amounts to the acceptance of a supposedly harmonious and predominantly rural economy resting upon overabundance, idleness, and wasteful use of manpower, and the renunciation of the great achievements of civilization bound up with a flourishing rural civilization. When decrying the ugliness and deterioration of human dignity in city slums, they suggest the removal of large industries rather than the removal of the slums and the creation of more decent housing facilities and the education and rehabilitation of slum dwellers. Innocently or deliberately, the champions of rural economy ignore the fact that rural slums, inconspicuous because they are scattered, marked by poorly equipped farms operated by inadequately educated farmers, are almost as disgraceful as city slums.

Worst of all, in elaborating upon the virtues of the well-to-do farms, and taking those as the chief support of their thesis, the apostles of agrarianism assume that well-to-do family farms can exist and produce entirely with their own resources, or that farm families ordinarily consume and enjoy goods and services that originate only on the farm. That assumption is false unless the utmost poverty is taken for granted. The households, the education, the medical services, the transportation, and even the production itself, depend heavily upon the resources of the nonagricultural elements of the economy. The author's observations of the idyllic and supposedly harmonious and blessed living conditions of European peasantries have convinced him that the low purchasing power caused by low output of product per man-hour is responsible for physical suffering without end, particularly of the overburdened women, for the fact that the people age early in life, and for the very high infant and child mortality. The inability to afford adequate medical and dental service is the cause of a rural health situation which in many countries is much worse than that prevalent among the urban working classes.

Agriculture is a business in which more than 80 per cent of all the work performed rests upon transportation. Tools and machinery, such as plows and cultivators and harvesters, must be moved over the land; harvested crops, livestock, and livestock products must be moved from place to place. Since transportation is the essence of farming, the invention of the combustion engine and its application to locomotion have naturally revolutionized the utilization of manpower in agriculture. World War I accelerated and greatly advanced

the application of the gasoline engine to agriculture. The acute shortage of farm labor it created stimulated the invention of labor-saving devices in American agriculture. Once developed, this machinery spread to other parts of the world.

The vicious circle in which poverty in agriculture is perpetuated was explained most clearly by Dr. Rudolf Bicanic at a conference on Scientific Problems in Postwar Reconstruction of European Agriculture, held in March, 1942, by the Division for Social and International Relations of Science of the British Association for the Advancement of Science in London.² He pointed out that while eastern Europe is not densely populated, it has a large agricultural overpopulation, especially in Poland, Slovakia, sections of Austria, Yugoslavia, Rumania, and Greece. More people live on a given farm unit than are needed to work it or can possibly earn a decent living on it. From 90 to 150 people live on 100 hectares (246 acres) of land in eastern Europe. The purchasing power of the peasant is low, since from 50 to 75 per cent of the farm output is consumed domestically. From the sales of the remainder, taxes, interest, and the essentials to production must be met. While labor is lavishly and inefficiently employed, it is so cheap that it renders the introduction of the machine unprofitable. Oversupply of labor keeps wages down, low wages pay a premium on wasteful use of manpower, and owing to the high proportion of farmers, keep down the purchasing power of the public. At the same time, productivity of land and labor are so low that a very small proportion of the total output can be marketed and exported. Whatever exportable surplus is sold results from financial pressure put upon the peasants. The fact that they represent the overwhelming majority of the people and have so small a purchasing power limits the capacity of the domestic market to absorb foreign exports. The per capita import rate of only \$6 to \$9 for eastern Europe, in contrast to \$96 for Belgium and \$99 for the United Kingdom gives some idea of how very small the possibilities for absorbing foreign exports actually are.

The Problem of Agriculture in Overpopulated Areas

In attempting to solve the puzzle of improving the situation for the farm population in overpopulated agrarian areas, we find ourselves

² Bulletin of the Commission to Study the Organization of Peace, Vol. III, no. 1-2, January-February 1943, p. 5.

caught on the horns of the following dilemma. Even in view of the millions of poorly equipped peasant farms prevalent all over the world—including much of the southern United States—the world's farms combined produce so much more food than the world's consumers are willing or able to buy that a serious price depression in agricultural products may take place at any time. If one were to attempt to attack rural poverty simply by improving the productivity of the farms merely by introducing machinery and better methods, the market would be ruined.

Where can the vicious circle be broken? The experience of all countries, which have passed beyond the stage of excessive agrarianism and have improved the welfare of all the people, proves that at the outset an outlet for more agrarian products in domestic and foreign markets must be created. This can be accomplished by opening foreign trade channels with industrialized countries which will exchange food, feed, and fibers for their industrial goods; and it can be accomplished at home by starting up industries. Both methods create additional purchasing power.

Agricultural exports give impetus to the technological advancement of the more alert farmers. Industrial development drains people off the farm, lightens the burden of the depressed farm labor market, and begins to lift wages. Shortage of farm labor makes it profitable to improve the methods of utilizing what labor there is, and sooner or later it begins to become profitable to use better tools and machines. The physical output of a given unit of time worked must be made more productive if poverty is to be overcome.

Once started, the structural change in the type of employment from a maximum of farm employment to a gradually increasing employment outside agriculture becomes a self-generating process. In a monetary sense it operates through the continual and gradual raising of more people into a higher real income bracket, in industry and commerce as well as in agriculture, and with it an expansion in purchasing power and effective demand.

If out of a poor and overpopulated rural community of 100 men of working age operating with only mules and swing plows, one drains off 20 men into a new factory nearby, 20 eaters have been transferred from farm to town. Since these men would not have left the farm unless they saw better opportunities to earn more, their increased purchasing power will reflect partly upon the type of food

and partly upon the industrial goods they will buy. If only industrial goods are bought, industrialization will expand until soon the food demand will expand and make it profitable for the men on the farm to produce more, and out of their increased income to invest savings in better tools and equipment.

The immense scarcity of individual activities leaves enough leeway for industrial development even where raw materials are not locally available.

Naturally this whole process involves the development of better skills and more knowledge on the farm as well as among the people who leave the farm. This, however, is the fundamental requirement of political democracy as well, which is founded on the belief that it is possible to develop intelligence and ability in self-government through the education of the people. Without advancement in general education and vocational training, more capital, even if infused from the outside free of interest charges, will simply be wasted. Thus the requirements for economic progress are fortunately in harmony with those of political and cultural necessity.

The Necessity of Changes in International Policy

The skeptical reader may be reluctant to accept this approach to agricultural reconstruction, even if theoretically it seems to be reasonable. He may suspect that these far-flung structural changes in the entire economic sphere would run afoul of the resistance of the peasantry in the undeveloped parts of the world. This suspicion will be strengthened to the point of conviction if based on an antagonism to the American obligations involved in such a policy of reconstruction. Here we must profoundly disappoint all those who shirk from the procedure outlined because they still cherish the utopian, untenable, and ultimately contemptuous ideal of the economic and political isolation of the United States. The gradual industrial development of agrarian countries, combined with the improvement of the productivity of manpower employed on farms through methods of improved foreign trade and improved capital movement is not a recipe concocted by economists alone. All agrarian governments in the world, in response to the demand of their farm leaders, powerfully support such a course. He who follows the press of the agrarian countries of Europe, South America, and India and studies what the representa-

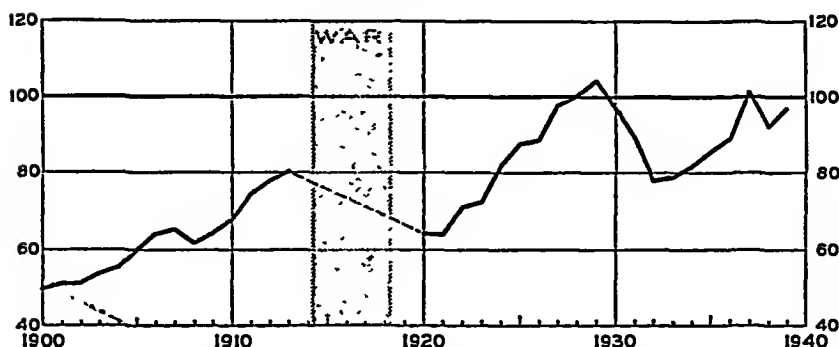
tives of China and western scholars living there report, cannot escape being impressed by the tenacity and insistence of the pressure toward opening the frontier of economic progress in those lands. All these agrarian countries have been given unique opportunities during the war and have driven good bargains with the advanced industrial nations. This is true of countries of the United Nations as well as Axis-dominated territories. Whatever concessions were made by the wealthier nations to those with more dormant, potential resources, but less operative and productive ones, were not motivated by generosity or magnanimity. Great Britain desperately needed a greater industrial capacity in India, and did her level best to assist in constructing greater steel plants and setting up dozens of manufacturing plants. The same held for the Near East, with oil developments and certain manufacturing plants. New industrial frontiers were opened in areas where agriculture was primitive and overpopulated, but the even greater share of wartime industrial investment fell into the areas of highly advanced farm enterprises, such as Canada and Australia.

As Chart IX indicates, the volume of international trade fluctuated violently during the interwar period. The recovery preceding World War II was the result of the developing industrial boom and of the accumulation of war reserves. Unfortunately it is not possible to continue the chart and bring it up to date, but it is obvious that in spite of all the handicaps of the war, the volume would be remarkably high.

The United States has assisted Central and South American countries in developing industries, land, transportation, and shipping as never before, because her own war effort demanded the closest political, military, and economic collaboration. Since America's farmers could not satisfy the existing war demand for food, otherwise highly improbable purchases of food were made by the United States in Central and South America, including even wheat, meat, meat scrap, and dairy products from Argentina. Many compromises and concessions had to be made to the alert and insistent good neighbors who very intelligently wanted to combine temporary emergency cooperation with a constructive, long-run policy of economic progress.

In Nazi Europe, the same trend brought even more remarkable results because the terrific pressure of necessity forced the Nazi regime to utilize the resources of all Europe to the utmost to defend their territorial booty and stave off defeat. The eastern and southeastern countries became economically integrated into the fabric of a con-

CHART IX

CHANGES IN THE VOLUME OF INTERNATIONAL TRADE, 1900-40 *
(1928 = 100)

* Data from *Statistical Analysis of the Relationship between the Volume of the World's International Trade and the Volume of the World's Merchant Shipping, 1900-1939* (U. S. Maritime Commission, Division of Economics and Statistics), May 1943.

solidated European market. Their agricultural produce found free outlets to the industrial deficit countries. Their manpower surplus was drained off partly by the migration of labor into central and northern European industries, and their own mining industries expanded, thus absorbing more rural manpower. The integration of the backward rural countries into the European economy secured for them industrial goods from the more advanced western countries—to be sure, only a part of what they wanted, but still a considerable amount. Rumania was obviously in the best bargaining position and agriculturally made more headway with mechanization and the improvement of farm labor productivity than did the others. New auxiliary industries, such as sugar-manufacturing plants, as well as plow and farm implement factories, are some of the gains of the years of nazi rule over Europe. The need to concentrate on essential war production during the war frustrated any attempts of the Danubian countries toward greater rural electrification that otherwise would have made way for increased efficiency on the farm and the development of decentralized manufacturing industries, without dislocating and

uprooting populations or starting a mushroom growth of urban areas.

There is no reason why such mutual aid and benefit should be exchanged only under the duress of dire need and grave national emergency. Enlightened and intelligently interpreted self-interest of nations should make it possible to establish a basis for even much wider collaboration by international commitments and working arrangements. Without the stimulus of emergency it will not be necessary to operate with the same violent emphasis and pressure for quick results, but it will be possible to envisage and plan for longer periods and for more durable relations. Whether or not this course will actually be chosen by the victorious democracies is connected with a most serious question concerning the practical possibility of maintaining peace: can democracies in times of peace maintain the alertness, the initiative, and the will to courageous action so common in war emergency, or will they relax and allow world affairs to drift as soon as the mortal danger seems to have passed?

In line with the need to improve the lot of the majority of the poor common men on earth who happen to still be farmers, and according to the desire of all the agrarian nations to establish higher levels of living for their people, some outlines of a farsighted international strategy for the great powers become evident.

The key recommendations for the reconstruction of agriculture concern several lines of international policy: (1) Foreign trade must be fostered by the concerted action of the Great Powers. They must commit themselves to the lowering of tariffs and the reduction of all other forms of protection for domestic industries. Industrial nations must be enabled to keep their populations well employed, and to abandon superprotectionist methods for their agriculture by which costly production on marginal land is artificially maintained. The agrarian countries will thus be able to improve the productivity of their farms, to export farm products, and to absorb industrial exports from other countries. Increased purchasing power for the farmers will increase the opportunity to expand domestic industries, which in turn will become importers of industrial production goods, tools, and raw materials.

(2) The export of capital from countries with high productivity, high capital formation, and excess of capital to less-developed countries must be encouraged by appropriate international action. Such

capital export, in the form of foreign loans or outright foreign investment ought to enable agrarian countries to improve their transportation systems, to develop the necessary auxiliary industries in agriculture, and to start manufacturing industries earlier than would be possible through the domestic reinvestment of savings only.

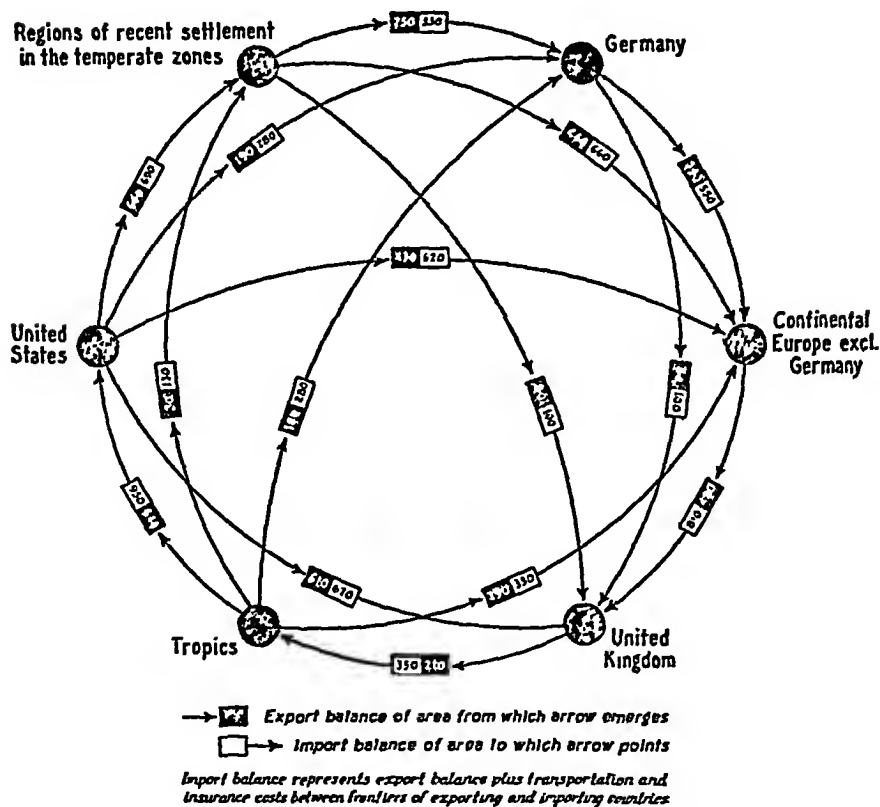
(3) International trade must be freed of the strait jacket of bilateral agreements, clearing accounts, and quotas, because these primitive forms of exclusive bartering between two nations politically distort the flow of trade among the areas of the world according to the principle of comparative advantage. Only multilateral trade can permit all nations to participate in an exchange which would give the maximum benefit to all. Chart X illustrates the major flow of multilateral trade in 1928, by showing in the black squares the export balances of major areas, and in the white squares the corresponding import balances of merchandise in millions of dollars. This chart makes it clear that trade must move triangularly and multilaterally if it is to serve its purpose.

The Effect of Freer International Trade upon Present Agriculture

One must ask, of course, what will happen to agriculture in western Europe under a policy of tariff reduction and the integration of a general European market. The question may be enlarged to include the future of agriculture in Canada and the United States if protection against South America were to be reduced.

By posing the question, we can return to the recommendations we have just made: (1) the improvement of international trade and (2) improvement in the international movement of capital. While it is not difficult to agree on the desirability of freer trade and freer movement of capital, a gamut of resistance has to be overcome to actually arrive at the acts of the legislatures of the various nations, by which such policies become reality. Even should the consent of all legislators to the general principles be secured, the whole issue may become chaotic once more by asking what will happen to the invested capital, the labor, and the whole community involved if a shoe-manufacturing industry is deprived of tariff protection against low-priced shoes, such as those made by the Czech Bata Company. Any

CHART X

THE DIRECTION OF MULTILATERAL TRADE IN 1928 *
(Balances of Merchandise in Millions of Dollars)

* Adapted from charts in League of Nations, *The Network of World Trade* (Geneva, 1942), p. 78, and Folke Hilgert, "The Case for Multilateral Trade," *American Economic Review*, XXXIII, No. 1, part 2, supplement, March 1943, p. 395.

number of other protected products of industry might be selected—watches, cameras, chemical products; or those of agriculture such as sugar, butter, cheese, beans, peas, beef, or pork.

In other words, to lower tariffs and open the road for an improvement of the welfare of the people on both sides of borders in democratic countries is not primarily a national question of adopting the general principle, but always a *local* one concerned with specific producers and their resources and specific commodities. In a democracy vested groups can, and do, appeal to the law-making bodies for relief from policies they believe are harmful to their welfare. Whenever the fears of those who have vested interests and wish to remain protected by tariff walls and equivalent devices outbalance the desire of other people to abolish such protection in the common interest, any move toward freer trade is defeated. Since we believe that such defeat by the world's greatest economic power implicitly means the doom of the future peace before it is won, we feel it essential to find the means for breaking the deadlock between exaggerated but somehow justified fears on the one hand, and the lofty but unrealistic campaign for a progressive policy of live and let live on the other.

Reconciliation of the Claims of Vested Interests with the Welfare of the People

A method different from the one so far adopted in the United States and in many other countries will have to be used to break the deadlock. To begin with, the anxiety of all those who benefit from the existing protection against foreign competition must be seriously considered. These beneficiaries include organized and unorganized labor, entrepreneurs, investors, and all those who potentially will be affected by the economic repercussions of the impending changes and adjustments. Instead of merely laboring the point of the greatest benefit to the greatest number in the long run, one must recognize as legitimate the fear of the smaller number of people suffering inevitable losses in the short run, who pay unfairly in property, income, and happiness for a supposed benefit in the future accruing to anonymous members of the community. Only if these fears can be reduced to a bearable limit and a solid floor be put under them, can there be hope that the practical isolationism of a great many American people will be reduced to a degree that will not jeopardize the formation of a bold and constructive foreign economic policy in the United States.

The Problem of Tariff Reduction.—In order to arrive at a practical compromise between the defenders of protection and the sponsors of freer trade, it will be necessary to find a fair arrangement for meeting two claims of unbearable hardship. The first is the claim that an abrupt change in the tariff or equivalent protection causes losses in investment, employment and other connected assets such as residential and community values by altering the structural market conditions without warning or time to make adjustments.

This claim, which may be correct in some special cases of highly protected and highly concentrated industries, can be eliminated by planning tariff reduction as a four or five year program with a pre-arranged rate and time schedule for lowering duties and setting forth the limits of reduction.

If this procedure could be carried out internationally, tariff reduction would assume a highly stimulative and educative character. The gradual reduction of trade barriers according to plan will guarantee fairness to protected business and will grant the time needed for adapting the enterprise to the proposed changes. Adaptation may consist of a great variety of measures, including a possible shift in the direction of effort, all of which are part of the rules of the game in private enterprise. The moral basis of fair play in the profit-or-loss economy is the balance between rights and duties—the right to earn the gains, but also the obligation to be fully responsible for taking the risk of changing conditions and losses involved. Those who decry the deterioration of the free enterprise economy and the drift into a semisocialistic type of economy are frequently unaware to what extent they themselves contribute to that political process by tampering with the basic rules of the game. To claim that a gradual lowering of tariffs according to a plan duly made public in advance is imposing too much on business amounts to a negation of the principles implicit in a system of free enterprise and unworthy of those who profess allegiance to it.

If tariffs of 30 per cent ad valorem should remain unchanged during the first year, then lowered to 20 per cent at the beginning of the second year and another 10 per cent a year later, to remain there unchanged up to at least the end of the fifth year, the enterprises affected would have adequate time for adjustments.

There will in all probability exist some enterprises whose manage-

ment will find it impossible to keep their formerly profitable business on an even keel after the final reduction of the protective duty. Some of them will probably be in reality "victims" of the freer trade policy. They may be forced to close down entirely. It is these borderline cases of extreme hardship which, during the Congressional hearings and in public discussion, are chosen as the typical example of the general and normal situation. We therefore recommend again that a solid floor be placed under the real or pretended fear of such crucifixion of a large number of people employed in such unfortunate enterprises. The floor should consist of a federal indemnity to be paid out of the Treasury to companies or individuals who can prove that they suffered from the tariff change a substantial loss in income and that they had no opportunity to avoid such loss during the period of gradual tariff reduction, either by adjusting their enterprise or by shifting into another activity. The burden of proof must rest with the claimants to such indemnity. The Congress ought to be bound to adjudicate the aggregate of all such claims in one procedure so as to avoid piecemeal treatment and cumulative lobby pressures.

This suggestion may seem absurd to those militant free traders who are eternally optimistic about the possibility of forcing the whole issue through the legislature. To the Marxian doctrinaires the suggestion must sound obnoxious because it "socializes losses" instead of profits. Yet, we ask the unprejudiced reader whether the unorthodox indemnity idea is really so objectionable and unusual. Is it not true that in our democratic society which is economically based on the institution of private property, we find it quite natural and in order that whenever the interest of the commonwealth comes into conflict with the property right of individuals we use the public power of eminent domain? Do we not condemn and expropriate property by due process of law and pay indemnity according to a fair appraisal of the damage or loss incurred by the individual?

We employ this tool when highways, railroads, power lines, reservoirs, or other public utilities have to be built, or whenever national defense demands its rights in specific localities. In our view the means of establishing freer trade is very similar. The particular income protection by trade barriers has been granted by the public only temporarily. The public must have the right also to employ power equivalent to eminent domain and change the income protection. And if

the protection existed so long that a customary right to it has been established, it is not too far out of line to consider indemnity payments in cases of extreme hardship.

This suggestion has certain connotations of a "pact with the devil." Powerful lobbies may be instigated to exploit this public indemnity to the limit. This objection simply distrusts the ability of the government to protect itself against corrupt exploitation of public aid policies, in view of vast public aid programs executed in many countries during and after the depression and the virtual absence of any major scandals connected with it. Another objection claims that while the suggested policy is simple in principle it is too complicated for administrative execution because of the intricate accountancy and auditing problems. This technical objection carries even less weight, since the settling of indemnity claims for real estate or large scale industrial enterprises under condemnation procedures is hardly less complex, and little if any serious complaint either in peace or in war is ever heard.

Neither one of these objections strikes at the essence of the real issue. If it is true, as we believe, that the establishment of a durable peace requires international co-operation in the economic sphere, then the interests of the security of all people make it intolerable to maintain economic comfort for a few by high tariff walls. Technical difficulties presented by the adjustment from high tariffs to lower ones can only be the challenge to apply more ingenuity to this task than has been invested to such an amazing degree in the construction of the machinery of protectionism.

The Problem of Capital Export Markets.—The opening of capital export from the capital surplus countries is of such vital importance to the foundations of the future peace and the reconstruction of agriculture that we do not hesitate to suggest a similarly unorthodox measure for insuring the political guarantee that capital will really flow into foreign countries. Again as in the case of the lowering of trade barriers, we consider it as the inevitable prerequisite to a constructive compromise that passive resistance to a bold policy must be recognized and taken seriously. Such resistance is the more powerful since it seldom comes out in the open. It is entrenched in various notions and convictions which persuade a large section of the American public to endorse and pursue policies which keep American

capital at home and deny the extension of its services to foreign peoples.

Foremost among the real reasons for such an attitude is the anticipation of an excessive risk of losses abroad, and the impossibility of foreclosing in case the debtors default. The experience of the early thirties with loans to Germany and Austria and the fraudulent practices later adopted by the nazi regime play a prominent role in the arguments. The case of the Mexican expropriation of American oil companies and the very recent attempted expropriation of American tin mines in Bolivia fall in line with such experiences, and any American investment banker with a long business record has had at least some disagreeable experience with investments in foreign countries of Europe, Asia, or the central and southern part of the Western Hemisphere.

As usual in such review of experience with debtors who defaulted, little effort is made to recall as well the host of satisfactory experiences which would prove at least that the foreign investment record was not all black and that honesty and good performance of debtors and mortgagors is not confined exclusively to the domestic area of the United States. There is a good deal of evidence that sometimes even in the United States adverse economic circumstances are occasionally stronger than the best ethics and moral intentions.

Does undue self-righteousness persuade us perhaps to overlook the fact that in the course of the economic history of the United States, until very recently, European capital was invested boldly in this country, and that several of the states defaulted occasionally on their foreign obligations? Is it not perhaps more advisable to discard moral indignation about the low standards of honesty in other nations in connection with American capital losses abroad, and to admit that many of these losses could have been avoided by the application of better economic wisdom about the necessary foundations of sound foreign investment?

Many of those bankers cut short the discussion of future American investment in Europe or Asia with the remark that they do not want to play the role of "international sucker" again, and that they do not cherish the idea of being called "Uncle Shylock" when they want to get their money back; and that even if a salt or match monopoly or customs duties constitute security for loans, one cannot send a destroyer to liquidate the defaulting loan.

From our observations in Europe in the late twenties, we are tempted to doubt whether American foreign investment has really been based in the majority of cases on a realistic and penetrating inquiry about the use of their foreign capital and the creation of the economic productivity and revenues out of which its repayment would have been secured. A great many American loans were simply extended to European banks without much knowledge about the soundness of their business expansion. It certainly is not enough to place investments simply upon the reputation and the subjective statements of the capital-hungry foreign customer. If the debtors used such foreign capital for imprudent investment on their part or worse than that, for refunding already dubious former loans, the most ironclad contract, and even battleships as support for the market, amount to no more than decorative gestures.

American foreign capital investment will be able to fulfill its important international and domestic function well only if the capital is placed as prudently as British, Dutch, and Swiss bankers have for centuries placed theirs. Such investment should be made by private initiative and not by government agencies. No other field of activity is more poorly adapted to execution by civil servants than the intricate and delicate matter of banking. It requires unusual alertness, the keenest perception of foreign developments, and a strong capacity to assume responsibility. No observance of instructions issued by high government officials can substitute for the judgment and initiative of highly qualified and experienced bankers. Foreign investment banking cannot be operated under the threat of public prosecution for any losses incurred and dismissal from office.

Assuming, however, an ideal combination of investment-seeking capital, of experienced, prudent, shrewd, and bold investment bankers, and an abundance of foreign demand for capital so that not only the "best risks" but the economically most promising and most desirable investments can be selected, it is nevertheless possible that only a small volume of capital will really move, because of too great uncertainty in the international political scene, or in the foreign relations with the most preferred nations who seek capital. Moreover, the banker is reluctant for two other reasons.

After the last depression the intention to create more security for the investing general public and to prohibit certain dishonest transactions in the banking business led in the United States to legislation

adding to the risk of losing capital the prospect of public prosecution prompted by incurring losses. Losing capital as a banker has somehow become a sort of potential criminal offense per se. The Johnson Act and other legislation relating to securities contain provisions that are a serious handicap to foreign investment. Secondly, the super-sensitivity of the American public against what Marxian doctrine had branded "capitalistic imperialism" and against "dollar diplomacy" has made it almost impossible for our government to try to endorse strongly the right of American investors abroad. No investment banker can have any confidence in placing American private capital abroad if the debtors know the United States government will not support its own nationals. In brief, the investment banker must be assured that his foreign business is considered desirable in view of our foreign economic policies and that he can count on governmental support, in his efforts to obtain a square deal from his debtors abroad.

In October, 1943, Secretary of the Treasury Morgenthau made public a plan for a United Nations Bank for Reconstruction and Development. The plan envisaged a capital of \$10,000,000,000 for the bank, to be provided in slices of 20 per cent each at the beginning and during any one subsequent year. The purpose of this bank would consist of the encouragement of private financial agencies, but also the supplementing of their business by long-term credits.

The foundation of this bank in July, 1944, offers a better opportunity to implement the policy which will be suggested below.

Public Insurance of Foreign Loans.—In order to create a new balance in the scales one side of which is so heavily loaded with the lead of political and legal risk, we recommend another quite unorthodox measure or policy: the public underwriting of a share in the risk of such losses as are incurred abroad through loans or other forms of foreign investment that are registered with and approved by the government of the United States. The power of registration and approval could be delegated by the Congress to a national board like the Security and Exchange Commission. By this procedure it would be possible to co-ordinate the official foreign policy and the private initiative of capital exports. The State Department should have one or more ex officio members on the board who could veto the approval of any transaction that was deemed out of line with foreign policy. The proportion of the share in the risk to be underwritten by the govern-

ment could be adjusted to the specific conditions prevalent in certain countries as well as to specific transactions. Frequently a public guarantee for 30 per cent of the loss involved would be sufficient to create the incentive.

Like the indemnity for losses caused by lowering of protective duties, this public insurance is not without domestic precedent or foreign parallel. The same principle prevails in the federal deposit insurance of all bank deposits or in the mortgage insurance of federal housing mortgage loans. The device of partial public underwriting of the risk in private loans extended to foreign countries has actually been used in France and Germany. The German experience with this method applied over a period of more than a decade to the German-Russian foreign trade was most satisfactory from every angle. The public guarantee against losses created an important volume of export business which otherwise could not have been obtained. It saved the government the nuisance of organizing public agencies for lending and trading abroad because private business was enabled to do the job. Best of all, not a penny of indemnity on account of the insurance granted had to be paid. The only symptom of the most effective measure was the appearance of the obligation in the balance sheet of the Treasury for the period during which the insurance was operative.

We are convinced that this measure will enable the United States government to make foreign investment sufficiently attractive to private capital as well as to guide such investment to the countries where this end is most desirable from the point of view of American foreign policy.

Effect of Capital Export on World Agriculture

Naturally, such capital export would have a powerful effect upon the reconstruction of agriculture abroad, no matter whether it would be used in agriculture for improvement of the productivity or chiefly for the better transportation and more public utilities in agrarian countries, or chiefly for industrial development there. Such capital export is an integral part of the postwar foreign trade offensive which other nations need just as much as does the United States if peace shall not become synonymous with economic stagnation or depression. In fact, particularly in the United States it should constitute a policy

subsidiary to that of a maximization of foreign trade for the very reason that long-term foreign investment is a means of fostering exports at a correspondingly higher rate than imports.

Loans extended to foreign countries are translated immediately into orders for exports. In fact, the money is obviously not "exported" but stays at home because the country which receives the loans uses the deposit made in its behalf in the lending-country's banks to pay for the purchases made. If, for example, the Bank of Manhattan subscribes to a 10-year loan by the Finnish farmers' central co-operative association, the latter will probably order bulldozers from the Caterpillar Company, manure spreaders, mowing machines, potato planters, hay bailers, and similar machinery from the International Harvester Company and will pay by check on the Bank of Manhattan. Other loans to Finland will be used for buying American cotton and tobacco. The Finnish debtors will pay annually only the interest due and in order to secure the dollar exchange will probably export to the extent needed (i. e., perhaps $4\frac{1}{2}$ –6 per cent of the sum borrowed), lumber or wood pulp, which may go to England or even directly to the United States. Or they may sell to Finnish shipping companies the provisions for ships and obtain from them deposits in New York which they may earn by carrying American exports to their destination for American accounts.

While it is the most usual course of events that foreign loans lead to an expansion of exports originating directly in the lending country and being destined directly to the borrowing country, the possible transactions are by no means confined to this bilateral exchange. Quite often one, two, or even more countries may be the intermediary links of exchange. For the repayment of such loans the triangular or multiangular form of trade is more common.

In our Finnish example a \$100,000 loan would have created an immediate export of that amount and thus an equivalent volume of employment, and only for \$6,000 worth of imports of goods or receipt of services per annum. Only in the tenth year would \$100,000 worth of goods or services be due. They might be received in the form of services rendered to American tourists and businessmen during their stay in Finland, or as insurance, shipping, patents, or authors' or artists' copyrights.

The chief argument against such a convenient solution of getting more exports and receiving in the short run only the interest or in-

terest plus amortization used to be that this method offers only a postponement, and not a real solution. In other words, when the 10 years of our illustration lapse, repayment is due and must be accepted. If it does not come in the form of gold or services, foreign goods will press into the American market. Thus we arrive at the initial argument in favor of economic isolation by tariff protection. To this notion that even in the case of heavy long-term capital export the imports may be much too burdensome in the domestic market leads us to throw in another question. Why not then go one step further and renew the loan provided its security is unquestionable? As long as the United States' economy creates capital at such a rate that full domestic absorption in paying investment is difficult if not impossible, while in some foreign countries the dearth of capital is extreme and investment yields high returns due to the disproportionately high increase in productivity, there is no reason why one should insist upon getting more than a good annual service from the principal.

This procedure simply leads to the necessity for searching anew for secure investment opportunities, and it also presupposes that a bold foreign policy of the United States will secure an era of peace. If, on the other hand, the United States should sometime produce capital so slowly or absorb it domestically faster than it can be formed, the original objection to receiving repayment of the principal from other countries, either in gold, goods, or services becomes invalid. Such capital shortage would lead to America's borrowing capital from abroad, which in turn would take the form of increased imports. Liquidating foreign investment by receiving the repayment of loans is simply the equivalent of borrowing.

At the end of this war the United States will most likely have boosted its capacity to produce in the war years to a higher total than would normally have been attained in perhaps 15 or 20 years of prosperity. In 1943 the total number of civilian people gainfully employed reached the record height of 52.4 million (annual average) compared with 32.3 million in 1935-39. To this number of civilians we must add approximately 12-13,000,000 men and women gainfully employed in the armed services. Millions of men and women have been newly trained. Unskilled workers have become semiskilled, semiskilled ones highly skilled. They have gained a productive capacity they never possessed before. The equipment of manpower with mechanical power and tools, the capacity of scientific management

and research all have been expanded so vastly that the normal rate of savings of 12-15 per cent of the national income will yield a truly exorbitant volume of annual capital increment—even when factory employment falls off and the armed forces have been demobilized. The amount of investment seeking savings, and at the same time the political pressure to maintain a high rate of employment, will be so great that in addition to the utilization of all domestic opportunities for paying investment, the foreign markets for American exports will be so attractive that long-term foreign loans as well as lowered tariffs will find much consideration even among all those who maintain their America-first attitude of economic isolation.

We need hardly attempt to refute remonstrance against the proposal of a partial risk insurance for approved long-term foreign loans by the public which is occasionally made by representatives of labor. They hold that it is an untenable imposition that the majority of the taxpayers should underwrite a risk of loss to a few capitalists since the public is neither interested in the security of their accumulated wealth nor in the augmentation of the earnings derived from it. We need not refute it because it is too threadbare in its shortsighted class-struggle prejudice and too conspicuously overlooks the fact that labor is the first one to participate in the results of an inadequate rate of paying investment, domestic or foreign. Labor is vitally interested in a high rate of productivity in the economic system. In spite of the high wage rates paid during the war the war boom has demonstrated that labor has to gain immeasurably much more by a high rate of employment and the resulting increased volume of total payrolls than by pressuring for higher wage rates. Different methods of carving up a too small pie will never yield to the individual what a much larger pie gives without trick carving. The experience of the last 20 years has amply shown that labor unions wield power of adjusting wages chiefly when employment increases. In depression they cannot strike with success except in some specialized trades. Since the rate of capital investment is recognized by both factions of the American labor unions as the chief factor responsible for the rate of employment, those unions must be interested in keeping the flow strong enough to avoid depression, if need be by foreign investment in addition to investment in the domestic field. This very real interest on the part of industrial labor determines at the same time the ultimate interest of all other groups within the economy.

Nobody could be more immediately and genuinely interested in a high volume of American export trade than America's highly protected farmers. Many of them are directly much interested in selling cotton, tobacco, dairy and poultry products, lard, pork, wheat, and certain dehydrated, canned, and fresh fruits, because they produce these products. All American farmers are even more indirectly interested in an optimum of industrial employment because it, and it alone, relieves agriculture of population pressure as much as it stimulates the domestic demand for high quality food and for a large volume of natural fibers.

O. B. Jesness, chief of the division of agricultural economics at the University of Minnesota, stated in an address before the Association of National Advertisers, in which he interpreted the dominant thought of American farmers about business: *

What the farmer is interested in is not merely wage rates for those employed, but incomes of his customers generally. This is merely another way of repeating that what farmers want is the fullest possible non-agricultural employment at productive work so that a satisfactory income may be earned by people generally. . . . Will our businessmen shrink from trade and try to hide behind a barrier of trade restrictions or will they engage in trade and assist in providing capital and other aids for its functioning and development?

Economically, the secret of the highly beneficial effect of international movement of capital toward the best investment opportunities lies of course in the fact that such movement increases the world's total productivity more than by keeping the capital at the place of its creation, because it moves away from zones of diminishing returns and seeks those of increasing returns.⁴

If the capital necessary for the reconstruction in various countries is not loaned by the creditor nations to those who apply for it, the alternative must not necessarily be the omission or delay of reconstruction. It can just as well be sought in the creation of such capital domestically by forcing consumption to lowest levels by taxation or by rationing and public borrowing. This is the method preferred by Russia for the last 20 years, which has kept her so much isolated from communication with the world's economy. Such a solu-

* "What the Farmer Thinks of Business" (address delivered at a meeting of the Association of National Advertisers, New York, November 18, 1943).

⁴ F. W. Fetter, "The Need for Postwar Foreign Lending," *American Economic Review*, XXXIII, 1, part 2, supplement, March 1943, pp. 342-361.

tion has its alarming aspects, because it involves the maintenance of wartime conditions for hundreds of millions of people, and threatens new military explosions.

If the vital capital export from the United States should flow freely, though we hope guided intelligently and cautiously by a constructive investment policy, one might expect that by virtue of competition and contagious confidence, other countries, for example Great Britain, France, Switzerland, Belgium, and Holland will also participate in supplying capital for foreign investment. Most of them will be bound to it as a means of stimulating the exports which they vitally need. Such capital will make it possible for agriculture everywhere to make changes and adjustments in the type and quality of its production and thereby to accomplish in five years that which reinvestment of the farmer's own savings or domestic surplus capital only might not attain for a generation or longer. Almost any measure of improvements on a farm, no matter how primitive, requires some new operating if not investment capital. That holds for fertilizer as well as all tools and much more for more desirable ameliorations on the land.

If the United States should refuse either by its national policies or simply by the unwillingness of private capital to move toward foreign investment or the unwillingness to receive payment on loans, it is at least advisable to recognize clearly the foreign consequences. The desire of the eastern, southeastern, and Mediterranean countries to improve their lot by improving their productivity and the income of their farm populations is so strong and the compliance with their demands is mutually so advantageous that in the long run the question is not whether they will get what they want, but from whom they will get it. In this sense the backward areas of the world will always have a strong bargaining position in negotiations with the more advanced ones who happen to be the greater power but who also happen to compete with other powers for leadership and influence in certain spheres of interest. If Europe cannot obtain capital from and trade freely with the United States, her own industrial nations will fill the gap by extending loans based on future increased production rather than existing capital reserves. If American capital does not act boldly, and if, moreover, the United States does not hold to the Atlantic Charter and its economic commitments, Europe will defy the United States not only in the economic realm. If the western and

central European industrial nations should be unwilling to integrate the Danube basin into a unified European market, they will organize themselves as a customs union of their own and try to obtain from Russia what they cannot get elsewhere. Ever since the nineties of the last century the Balkans have been the European trouble zone, essentially because one of the western powers—Germany—was willing to fulfill the expectations of the agrarian southeast.

Professor Antonin Basch has analyzed the relations between Germany and the agrarian southeast in his recent book.⁵ He lays great stress upon the necessity of reducing the high agricultural protection in western Europe, originally in the eighties and nineties of the last century set up against overseas competition, but in the thirties of this century changed toward the aim of autarchy. Professor Basch expects a change in the structure of agriculture in western Europe whereby the Danubian countries will obtain a better market for the products that they can produce at lower costs. He considers the possibility of a customs union for the eastern states, and develops the necessity of expanding the very small industrial sector in the agrarian Danube. He confirms the fact that the natural resources required for building up new industries and expanding old ones are present. The area has many minerals, including oil. Timber is present also. Most abundant of all resources is manpower.

As to the need of capital imports, Professor Basch states particularly that the question of new industries and the development of highways, railways, and electric power require foreign technical assistance and foreign capital. He points out that the public utilities, of which only a few beginnings exist, will call for "huge" ⁶ investment, and will thereby offer an opportunity for international investment and development organizations "which can bring together the surplus savings of the advanced industrial states and the capital needs of the backward countries."

The same situation prevails in the Near East, in Central and South America, and in eastern Asia. Since American capital and foreign trade policy did not operate with the same initiative and driving force as those of competing nations, the Germans, the Italians, and the Japanese filled the vacuum.

⁵ *The Danube Basin and the German Economic Sphere* (New York, 1943), pp. 235-247.

⁶ *Ibid.*, p. 244.

In the tenacious and sometimes bloody struggle for supremacy and power between the leading nations, it is immaterial whether a nation has ascended to the most dominant position by conscious will and explicit desire, or whether it has accidentally drifted into that state. If America does not live up to the obligation of bold leadership involved in the position she acquired in World Wars I and II, she will sooner or later lose her position by default.

Since this was written, the United Nations Monetary and Financial Conference at Bretton Woods, New Hampshire, adopted on July 23, 1944, the articles of agreement for the establishment of the International Bank for Reconstruction and Development. The Bank will have an authorized capital stock of \$10,000,000,000. Its purposes are defined as follows: ¹

Article 1. To assist in the reconstruction and development of territories of members by facilitating the investment of capital for productive purposes, including the restoration of economies destroyed or disrupted by war, the reconversion of productive facilities to peacetime needs and the encouragement of the development of productive facilities and resources in less developed countries.

Article 2. To promote private foreign investment by means of guarantees and participations in loans and other investments made by private investors, and when private capital is not available on reasonable terms, to supplement private investment by providing, on suitable conditions, finance for productive purposes out of its own capital, funds raised by it and its other resources.

Article 3. To promote the long-range balanced growth of international trade and the maintenance of equilibrium in balances of payments by encouraging international investments for the development of the productive resources of members, thereby assisting in raising productivity, the standard of living and conditions of labor in their territories.

This declaration of intent of the subscribing nations, as well as the foundation of the Bank, hold out the promise for a promotion of economic development and international trade through concerted financial action. Thus the foundation of the International Bank for Reconstruction and Development is another cornerstone to the institutional edifice of reconstruction which will serve agriculture as well as industry.

It would be unjustified overoptimism, however, to believe that the International Bank as such will be able to supply the needed capital for reconstruction and development. If the private investment agen-

¹ *New York Times*, July 24, 1944, pp. 10-11.

cies and investors in the United States should prefer to leave the entire task to the International Bank, and confine their transactions to the domestic market, this nonco-operation could not fail to have most harmful effects upon the establishment and maintenance of peace.

The Necessity for International Currency Stabilization

There remain other obstacles besides high tariffs and excessive risk in foreign investment which must be overcome if freer trade shall open the road to reconstruction in world agriculture. Neither trade nor capital will flow freely beyond national boundaries so long as the germs of monetary instability infect the world economy, and so long as the nations do not renounce the prerogative to use currency devaluation by unilateral action as a means of boosting their exports and curtailing imports. It is internationally recognized that the competitive depreciation of currencies is a weapon in foreign trade warfare that has quite destructive results in the world market. When employed by the leading economic powers it undermines the confidence of business all over the world. The effects upon agriculture are worse than upon industries because of the very slow turnover and the still slower process of adjustments in production to changed price relations in foreign markets.

The very complex subject of the most appropriate method of international currency stabilization cannot be discussed here. For our discussion of the reconstruction of agriculture it is important only to recognize that a freer flow of trade and of capital should not be endangered by the immense additional risk of unpredictable currency devaluations. The vast accumulation of monetary gold in the United States offers a great opportunity to start a courageous and determined international policy of currency stabilization which subjects alterations of exchange rates to a procedure of consultation and agreement. If this could be accomplished under American and British leadership, the prospect for an era of constructive international economic policy would brighten considerably.

Many, though by no means all of the countries in greatest need of foreign reconstruction materials will have inadequate gold or foreign exchange resources to withstand the pressure of several years of adverse balance of payments without running the risk of a serious devaluation of their currencies in relation to others. If this situation

is not remedied by international action, reconstruction will be impeded and dragged out over very long periods.⁸

On July 22, 1944, the monetary parley at Bretton Woods, New Hampshire, led to an agreement between 44 nations by which an International Monetary Fund is established with the purpose of limiting the violence of currency fluctuation.

In order to accomplish greater stability for the world's currencies, many adjustments must be made in the domestic policies of all the countries involved. The United States currency must be freed of the fetters of foreign exchange controls and the gold coin redemption must be restored. The longer public budgets are kept wide open after the war the more the hope of stabilizing currency will diminish. This discussion of essentials indicates the nature of actions to be undertaken in many countries if international currency stabilization is to succeed.

High Prices as a Handicap to Farm Exports

The reconstruction of world agriculture on the basis of a certain degree of division of labor among various agricultural areas and an exchange of products in international trade require that there be a world market price and that the products can enter that market from various countries at prices that make it profitable to sell there. If cotton is to flow from the United States into the world market it must fetch prices that are not far below the domestic level. In the United States the prices of nearly all agricultural products have been lifted by public policies to levels far out of range in comparison to those of other agricultural exporting countries. During the war this does not lead to serious complications. Exports are flourishing in spite of high prices because they flow as the result of public order and not by virtue of competitive bidding by foreign buyers. They are shipments either on military or lend-lease order, and they will flow without difficulty as long as the war lasts and public agencies buy and ship them.

That Congress has guaranteed⁹ the American farmers such prices

⁸ H. D. White, "Postwar Currency Stabilization," *American Economic Review*, No. 1, part 2, supplement, March 1943, XXXIII, 382-387.

⁹ Cf. Agricultural Adjustment Act of 1938, amended October 12, 1942, by Section 8 of the Stabilization Act, the so-called Steagall Amendment.

far above the world market level, or worse, completely independent of it, for a period of two years after the end of the year in which either the President or the Congress shall have proclaimed the cessation of hostilities, creates a very difficult situation. The worst feature of this policy is the determination of the price level by a formula which completely ignores the supply and demand situation as well as the income derived from the products by the farmers. If within the stipulated period of this support price policy, which may actually extend close to three years after the end of the major action in the European war, international trade should be resumed on a competitive basis, this policy means that the farmers of the United States would lose their export market for foreign products. That in turn would make drastic curtailments in production inevitable. The remedy for such confinement of farm production to the domestic market would consist either of lowering the domestic level of farm prices or the payment of public subsidies for exporting.

The latter solution constitutes dumping. When it comes to receiving the goods, every nation considers subsidized exportation an unfriendly act. Such acts are usually countered with special protective measures such as supertariffs or other measures of outright retaliation. Obviously, dumping a large volume of goods into foreign markets at prices lower than those at home does not contribute to peaceful co-operation and cohabitation. It creates very undesirable and erratic disturbances in the market. The greater the risk of violent price changes becomes, the more farmers in the importing countries will demand protection, and the more industries will also begin to ask for it. The policy of guaranteeing support prices for farm products for years after the war's end, irrespective of the price level in the world market, is therefore in contradiction to peaceful economic co-operation with other nations and to the principle of free access to raw materials stipulated in the Atlantic Charter.

Such policies of guaranteeing minimum prices for farm products irrespective of market conditions may in due time collapse by the sheer weight of increased production. In summer 1944 the stimulative support prices for potatoes and eggs combined with certain unforeseen developments on the demand side led to such surpluses that the War Food Administration had to divert certain amounts of potatoes and eggs to animal feed at heavy losses. On June 9, 1944, no less than 90 carloads of fresh eggs were sold at 5¢ per case of 360 eggs. These

sudden surpluses indicate how defective the system of price supports is. If the price support system should collapse as it did once before under the Federal Farm Board, the situation would not be improved unless a more workable method of balancing the income of farmers were found.

One alternative would be the curtailment of domestic production in order to lift the prices to "parity" or the point where they give the farmer an income comparable to what he received for a certain base period. This method, applied under the AAA, is undesirable for several reasons. It creates shortages at a time when consumer incomes are low and thus puts an additional burden on the low income groups, while it interferes with foreign trade as much as does the price support.

The far better alternative is the application of a method which has been used in Great Britain in connection with the subsidy to wheat growers. It consists of a public guarantee of the price farmers shall receive for a bushel of wheat up to a limited number of bushels. They sell their wheat at whatever price they can get and as much wheat as they want to sell, but receive the difference between the guaranteed and the actually obtained price from a special public fund. This form of income guarantee does not interfere with the market or with production. It even does not boost production beyond limits because excessive production diminishes the return per bushel to the farmer.

Unfortunately the American farm bloc in the Congress has condemned any form of subsidy payment to farmers as unfair to the farmer, and insists upon "just" prices, although the public price support measures are also subsidized. Guaranteeing the income from farm commodities by deficiency payments falls, of course, under the category of subsidies which the farm bloc finds objectionable.

Since tendencies to grant the farmers certain guarantees for their "fair share" in the national income, and guarantees against the ill effects of glutted markets will be operative in all parts of the world, this question of the form such guarantees will take is of crucial importance to the functioning of world trade. Methods of public intervention in behalf of the farmers which interfere least with production and the market will be the most beneficial ones for the consumers as well as the producers.

After a relatively short relief period, which may still be interspersed with shortages of some food commodities, the chief agricul-

tural-exporting countries of the world are likely to face a serious commodity-surpluses problem. They may need to readjust production capacity after its overexpansion during and immediately after the war. The war has stimulated technical progress in agriculture; a good deal of it has not yet been applied, but is ready to be put into action as soon as the war is over. The farmers in the countries that experienced the greatest agricultural war boom will have sufficient financial reserves to buy the new labor-saving machinery as soon as the war is over and the equipment is available, in order to curtail costs. The result, however, will be the maintenance of an oversized production as well as an expansion in areas of the world that offer the greatest return from such investment.

Under such circumstances governments must refrain from choosing policies which impede the process of economic adjustment, and must confine themselves to cushioning the shock for the producers without regimentation. Surpluses require a maximum stimulation of consumption, an expansion in the utilization of the commodities in every form, diversion to new uses, and the reduction of production. The most powerful implement for setting in motion all of these changes is price. A lowering of the price results in the gradual elimination of the high-cost producers. This process is a necessary part of the changes which in their aggregate sum up to economic progress. The chief reason for governmental intervention is that this economic automatism operates with too great hardships and is too cruel. At the same time, this process has the advantage of protecting freedom of enterprise. The essential requirement for its proper functioning is the opportunity it gives the marginal producers and those who must shift to other fields of economic activity to make the change. If, therefore, industrial prosperity prevails at the time when agricultural surpluses occur, no effort should be made to prevent the shifting of farmers into other occupations.

Methods of agricultural policy that support prices in the markets not only interfere with the adjustment processes in all spheres of the market, but also lessen the pressure upon the high-cost producers to stop producing. In so far as support should be given farmers, it should come in the form of low-interest-rate credit and a minimum income guarantee, but not by means of allotments of reduced production quotas and price-boosting methods in the market.

In so far as a shift into other types of agricultural production is pos-

sible, it should be assisted, if need be, by subsidies. The adjustments to be made by the farmers should be guided by production goals established sufficiently in advance by public planning agencies. If an income floor is in force in the form of a guaranteed minimum return per unit of the particular commodity, the latter guarantee must be fixed at such level that the goal will be reached but not overshoot. The income floor, which will result from the guaranteed "price" per unit, and the desired volume of production, or the goal, determine the minimum income for the farmer without directly interfering in the market.

If the Congress of the United States does not revise its present policy of supporting farm income through guaranteed market prices, it will be forced to adopt several types of supplementary measures in order to prevent the collapse of its price-supporting agencies, such as the Commodity Credit Corporation. It may subsidize consumption on a large scale, and it may also subsidize exports, if need be, by exporting at a loss. Either of these measures or both combined require the additional measure of direct production restriction by quotas, because otherwise the surplus production will increase or will be maintained, since the guaranteed price makes it safely profitable.

International Commodity Agreements

The same reasons which have led to public price supports in behalf of agriculture in the domestic markets have led to efforts on the side of producers and exporters to control the prices in the world market. Severely declining prices, caused by heavy supplies in relation to the demand, threaten very low yields from invested capital, if not heavy losses. The efforts to reduce this risk center around the device of curtailing competition, substituting for it planned collective action, and controlling either supply or supply and production by quotas for the purpose of keeping the price at a profitable and possibly stable level.

Ever since World War I and the increasing violence of price movements of raw materials in the world market, price control schemes have been set up. Many of them have failed. After initial efforts to organize such schemes on a private cartel basis proved their ineffectiveness, efforts were transferred, mostly after the great depression, to the field of intergovernmental action. Such international agreements

were organized for wheat, sugar, tea, coffee, beef, timber, rubber, and tin.¹⁰ The League of Nations dealt with the various aspects of such agreements in several committees. Since most of the control schemes involved the highly controversial matter of production quota regulations and acreage restrictions, no definite recommendations for concerted action emerged, although the importance of further exploration was stressed. In the thirties the "ever-normal granary" policy pursued in the United States and J. M. Keynes's championship of buffer stocks for Great Britain gave new impetus to the evolution of international thought with reference to international commodity agreements.

The Second Inter-American Conference of Agriculture held in Mexico City in July, 1942, endorsed the approach to the solution of surplus commodity problems through international agreements. However, the United Nations Conference on Food and Agriculture, held in Hot Springs in May-June, 1943, insisted that the world should, after the war, follow a policy of bold expansion instead of the timid regime of scarcity which characterized the thirties and did not arrive at a unanimous opinion about the nature of commodity arrangements. The Conference laid particular stress upon the need to design the international commodity agreements so as to promote the expansion of an orderly world economy and of co-ordinating their operations in close relation with international economic programs for raising consumption levels.

The difficulties of carrying out the enlightened recommendations of the Hot Springs Conference are immense, simply in their business and administrative aspects. It seems quite clear that the consumers must have equal representation on the boards which govern the policies of the agreements. However, even if the machinery for operating such agreements could be vastly improved, there remains the serious doubt whether this sort of international planning of the world's commodity markets is the most desirable and feasible form of handling the international trade of agricultural commodities and strategic raw materials. If it has not been possible to shape the public price adjustment policy for agriculture in the United States during the last 11 years in such a way that economic resources could be most advantageously allocated while instead political pressure of the pro-

¹⁰ International Labour Office, *International Commodity Control Agreements* (Montreal, 1943), introduction.

ducers has invariably succeeded in forcing defective though expedient legislation, what gives us the right to assume that in an international body the same thing will not happen?

As in the case of domestic issues, planned economy transfers economic decisions into the political sphere. Instead of economic efficiency, a political dictate determines who produces how much of what, where and at what price. How is economic progress to be kept alive? How shall one prevent the control schemes from protecting the status quo?

For example: Argentina is the country which can expand its wheat production far without increasing costs. These costs are considerably lower than in the other chief wheat exporting countries. Why should Argentina abandon the right to its future expansion of production which will benefit the consumers in importing countries? Naturally, in a wheat agreement the chief interest of the other exporters must be to "tie the pike in the pool."

One cannot deny the possibility of temporarily smoothing out the worst effects of cutthroat competition in a glutted market, but the utmost skepticism is in order when an attempt is made to distribute the world market in cartel quotas.

The die is not yet cast as to how the postwar foreign trade in the great agricultural staples will be organized—along the lines of open competition or through international planning and commodity agreements. The opinion in Great Britain is as much divided as it is in the United States, where the rift cuts right down the middle of governmental agencies chiefly concerned with foreign economic policies. The decision is up to the United States. Great Britain will endorse the policy of control of world markets only in self-defense if the United States insists upon forcing international agreements. Unfortunately both the high protection of most farm products and the public price guarantee for years after the war strengthen the demand for international commodity agreements as a means of exporting by quotas and not under competition by price.

During the period of transition from war to peace, a gradual de-control of international trade, of shipping tonnage, and of prices will be needed. The Combined Boards will continue to function for a considerable time. Yet the vital issue remains. After the period of transition, will an era begin in which world agriculture can contribute its share to the increasing wealth of the nations by an ex-

pansion in the areas of lowest cost? International agreements will inevitably tend to freeze production at its historical location, as the AAA programs typically have done for cotton in certain areas of the South, a commodity whose production without quota planning would have shifted more and more into the low-cost areas and toward more efficient methods of production.

The Anglo-American agreement on petroleum in August, 1944, which is the first step toward a multilateral agreement, constitutes the most advanced type of commodity agreement. It lays down certain broad principles concerning the international trade in oil, emphasizes the necessity for conference and consultation on all matters of action among the governments concerned. This agreement particularly provides for the fullest representation and consideration of the consumers' needs. The accent has properly been placed on expansion rather than restrictive measures.

It is to be hoped that agreements on agricultural commodities will be shaped along the line of the petroleum accord.¹¹ In the field of international economic co-operation, as in domestic farm policies, we are not faced with the alternative between laissez-faire and public regimentation with price-fixing and production quotas. There are many courses of action which promise to operate in the direction of the desired results besides these extremes. It is true that the value of the export of some specific agricultural commodities represents for some countries such an important item that violent changes affect the stability of their currencies and their national budgets. It is erroneous to conclude that this situation requires the fixing of prices by international action, which in turn would require the fixing of export or production quotas. The value of exports, as well as the income of farmers, is the product of price times volume. International policies that succeed in increasing the volume of exports may maintain their value even when the price falls. In fact, the volume that can be sold depends on the lowering of price. Thus, commodity agreements should be largely concerned with multilateral action of all nations involved in the reduction of tariffs and excise taxes and all other measures which tend to keep the demand for the products low.

¹¹ The interested reader will find the following materials useful: International Labour Office, *International Commodity Arrangements*; Joseph S. Davis, "New International Wheat Agreements," *Wheat Studies* XIX, no. 2; Stanley S. Tsou and John D. Black, "International Commodity Arrangements," *The Quarterly Journal of Economics*, August 1944; and V. D. Wickizer, *The World Coffee Economy* (Food Research Institute, Stanford University, Calif., 1943).

The greatest weakness of commodity agreements lies in the confinement of the whole policy to the field of one or several commodities. To arrive at the proper concessions which would lead to an expansion of exports will often require action far outside the commodity field. Commodity agreements can at best be supplements to broad and progressive multilateral trade agreements. In the absence of the latter, the nations most interested in international commodity agreements will try to solve their problems by comprehensive bilateral trade arrangements, such as the accord under discussion in August, 1944, between Great Britain and Argentina, which contemplates a guaranteed purchase by Great Britain of all the chief agricultural produce of Argentina for four years—at fixed prices for two years, and at prices subject to later agreement for the remaining two years.

Political agreement on export quotas can never fully maintain the beneficial effects of international trade on the basis of comparative advantage and competitive price.

General Orientation for a Feasible Course of Agricultural Reconstruction

SO FAR we have dealt with the international framework of institutions and their functions as a prerequisite both for the peace of the future and the reconstruction of agriculture. Before we can deal with the work of agricultural reconstruction as it pertains to the actual farms themselves, we must determine the broader economic conditions and the functional environment into which changes in agriculture must be fitted. Most important of these are the performance of industries, the rate of general employment, and the generation of effective demand for food and fibers, the resumption of dietary trends, and the possibility of public action toward better nutrition and health.

Industrial Employment Essential to the Welfare of Agriculture

One of the outstanding features in the tidal waves of prosperity and depression, and even more in the general structural crises that shake the modern economy, is the difference between the performance of agriculture and of industries. The volume of physical goods produced in agriculture and the amount of food consumed is remarkably well balanced throughout the entire business cycle. Violent changes in the output of primary as well as manufactured goods are characteristic for industries, and they radiate into all the services, such as transportation, commerce, insurance, and banking.

The ultimate complex causes for such powerful shifts in production lie in structural tensions and disproportionalities between the supply and demand of specific goods as well as in the financial superstructure of the economic system, all of which change the profitability of production and investment. Irrespective of the intricate interplay of factors which brings about the drastic changes in productivity and employment in industries and adjacent economic sectors, it is impor-

tant to realize that these powerful motions of contraction and expansion reflect in full force upon agriculture, the more so the larger the proportion of agricultural production sold in the market.

Because of its own gravitation as a biological industry, its decentralization, and many other retarding factors, agricultural production continues when industrial production and employment in cities decline. Agricultural production would even be continued right into the period of industrial depression if the biological and technological factors did not exist, because of the form of enterprise that prevails throughout the world outside of Russia. When industrial plants face a shrinking demand, they can reduce costs by laying off labor. Family farms cannot resort to that measure because the family is the labor force. Shrinking purchasing power of the people and the elastic demand for many "optional" foods forces the prices of food down until the market will absorb the supply.

This process prevails as long as it is not counteracted by government action. The price decline of food substantially mitigated the impact of the industrial depression of 1929-33 upon the supply of this basic need of all people. Thus, modern industrial depressions could pass without famine and even without seriously deteriorating the nutritional level of the working population. But the financial impact upon agriculture was severe. Unfortunately remedies were sought in the interwar period not in an immediate and large-scale reduction of taxes and interest, in prices of fertilizer and farm machinery, but essentially in the restriction of farm production and price-lifting measures. Actually, these efforts met with little success because they were thwarting and circumventing in character. If such measures to fight the shrinkage of farm income by planned restriction of food production were to be made effective in the future, they would lead to a much more oppressive situation for all unemployed people, and thereby make depression more destructive, particularly in a political sense.

The only intelligent approach to the problem of depression in agriculture as well as industry is the prevention of the idleness of a large part of the industrial plant and all the connected sectors of the economy.

If agriculture is to be reconstructed in the areas of Europe and Asia that have suffered most from war, the most vital part of a sound strategy must concern the creation of work in all nonagricultural

spheres of the economy, foremost in all industries. Many extreme programs are being advocated according to which industries in Europe, for example in Germany, Austria, and Italy, should not be rebuilt and people should find more employment on farms. Major George Fielding Eliot has proposed that all the industrial plants of Japan, for instance, should be destroyed and their restoration prohibited. If such radical plans should be pursued and the contemplated industrial decay should emerge, it would mean simply that the existing farm population would be impoverished to an unbearable degree. More manpower would be available to produce less food than before, since the existing technical equipment could not be maintained due to the shrinkage of the market for food and the disappearance of the industries supplying machinery to the farms.

Re-agrarianization is the opposite of what Europe and Japan need. Whatever efforts were made in that direction during the last depression, and to some extent during the war in occupied countries, were dictated by desperate emergency. The extent to which the common people were aware of the lowering income is amply demonstrated by their resistance. Governments had to use force to transfer labor to farms.

There is good reason to expect a boom in industrial activity in all countries that have suffered from the war provided that order and quiet are restored and effective governments organize the resumption of production, seeing to it that the available resources are used according to priority of need.

It must be realized, however, that in the United States, Great Britain, Germany, and Russia, the war has led to a degree of utilization of available manpower that can only be called "overemployment" and that, if maintained in normal times, will impose a serious restraint on the legitimate pursuit of happiness on the community. Countries such as the United States and Great Britain have developed such a tremendous capacity to produce physical goods that it will be difficult to absorb the flow in a peace-time economy. The reconstruction will require decreasing the overemployment of housewives, elderly and young people, and some shift from the production of goods to the creation of intangible services. In agriculture the adjustment will require the reduction of working hours of men and women.

But there will be countries which will have lost so much that they

may not be able to afford such adjustments. They will be bound to retain overemployment for many years after the war. Russia, Germany, and Italy will probably find themselves in this situation, and in it to a greater degree the less they can draw on credit from the more fortunate, wealthy nations.

As soon as industrial reconstruction begins to set the wheels humming again, agriculture will come back into its own almost automatically. The destruction that war brings to the battle zones is a frightful and depressing sight. However, the fact that millions of houses lie in ruins and ashes; that whole cities have been wiped off the map; that sewers, water mains, power plants, railways, and tramways have been blown to shreds, means that there is an urgent need and demand for the restoration and replacement of all these essentials. Cities and millions of houses must be built. In the modern economy there is no greater stimulus to large-scale employment than the development of housing, because it creates employment not only in construction itself but also in the great variety of industries that supply the materials for construction. The bombs destroyed not only the dwellings, but also a great amount of durable household goods. Again this destruction creates a demand for replacement which piles up a vast backlog of future orders for industries.

This process of reconstruction will derive its main supplies from domestic resources. It can be substantially advanced by supplies from other countries in order to break bottlenecks. It is in the process of supplementing reconstruction with vital materials that the necessity arises for opening opportunities for payment. It is obvious that a large part of such industrial reconstruction will depend on public financing. With reference to the potential power of governments to finance large-scale investment, the last twenty years have contributed considerably more experience. It has been discovered that the creation and maintenance of a high rate of employment open opportunities for increasing public revenues or private capital formation which go far beyond what was once considered possible. The gigantic creation of heavy industries in Russia topped by armament, and the German industrial expansion and armament from 1933-39 are two good examples. America's increase in public revenues and in capital reserves during the war years illustrates also how full utilization of the productive manpower in industries strengthens the power for further in-

vestment. Thus the financial problem of creating the necessary credit for the reconstruction of cities and industries will not be insurmountable.

If the people in the cities who have lost most of what they once owned can go back to work and earn a wage, they will buy food again and thus create conditions under which agriculture may function. Since they will be poor in capital assets as well as spendable income for years to come, the people will spend a larger proportion of their earnings for food than before, but they are bound to economize on their food budget. They will expand the latter only when they have replenished other necessary supplies, such as clothing, furniture, and other household equipment, and have rebuilt some measure of security in the form of savings.

The Resumption of Dietary Trends

How much economic leeway the world's commercial farmers have to produce food is determined by the amount, the type, and the quality of food the nonfarm people are able and willing to buy. Modern technology, progress in research and its application to the production of plants and animals, and the development of greater skill in farm management have created a situation in which the potential capacity to produce food by far exceeds its effective demand. Man's want of food is limited by its biological nature, while his other wants relative to physical goods, services, or his cultural desires, are in principle unlimited. Since man never desires to satisfy just one of his wants at a time (and particularly when he is poor will he try to arrive at an optimum satisfaction of the aggregate of all his wants), it is inevitable that he has to compromise on the amount of money, i. e., work-energy, he can spend on food.

The less purchasing power people have at their disposal, the more they must economize on food. This holds for farmers as well as for city dwellers. Moreover, a farmer with low purchasing power is bound to direct more of his energy to the production of clothing, shelter, and the replacement of tools. The application of thrift to the selection of the food items composing the menu does not mean that people curtail the amount of food energy they consume. The need of caloric energy is determined by body stature and weight, by sex, by type and amount of physical exercise and work, and by the

climatic conditions that apply to each individual. Only when they really lack sufficient food supplies or suffer absolute destitution will people fall below their caloric requirements. Sadly enough, there are parts of the world today where a primitive economy creates famine conditions permanently for some parts of the population; and where drought or other natural disasters bring temporary famine to millions of people. The western world has overcome this situation by means of greater productivity of labor on farms, foreign trade, the accumulation and carry-over of food stocks, improved transportation and distribution systems for food, and with credit at low interest rates.

H. R. Tolley, chief of the Bureau of Agricultural Economics in the United States Department of Agriculture, calculated that American agriculture could supply the American people with all the food needed, but at different levels of nutrition, from as few as 145,000,000 acres of crop land, and as many as 300,000,000 acres.¹ Naturally, the diet at the various levels of nutrition would be composed of different items. It would cost more the more liberally it were composed and as more land and work and capital became necessary to provide it.

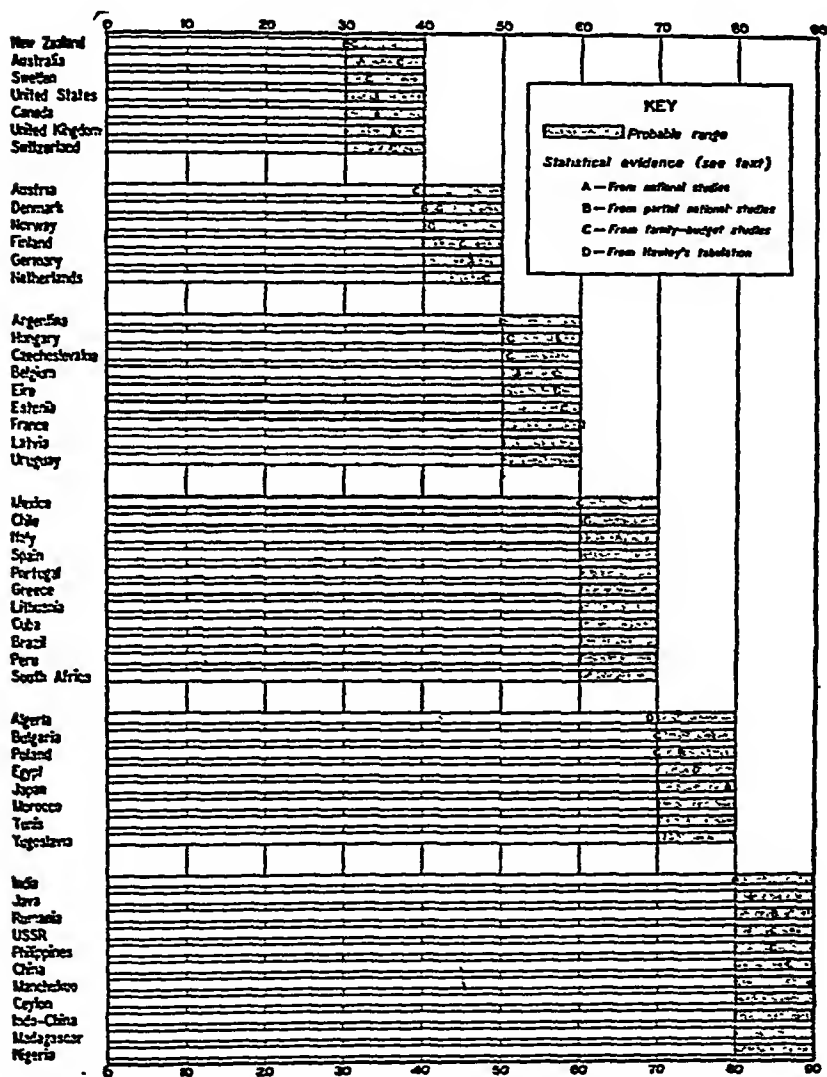
The requirements of fuel for the body can be met in many ways. Some foods are produced in abundance at very low cost; others involve greater efforts in production and consequently are scarcer and fetch a much higher price in the market. This holds not only for energy-bearing foods such as the starches and fats, but also for the proteins which are necessary to build body tissues or to replace worn-out tissue cells. In general, vegetable matter is less expensive to produce than animal products. Starches are in general less expensive than fats, and both less so than proteins. From country to country the costs of producing any one of the food items differ according to natural as well as economic conditions.

Hence it is not surprising that a comparison of the diets of the nations reveals great differences. As M. K. Bennett has demonstrated, the most outstanding feature of these differences concerns the proportion of calories in the national diet derived from starchy foods such as cereals and potatoes. As Chart XI indicates, the nations with the highest per capita income could afford to eat a diet with as little as 35 per cent of the fuel value derived from starchy foods, while others

¹ J. D. Black, "The International Food Movement," *The American Economic Review*, December 1943, XXXIII, No. 4, pp. 791-811.

CHART XI

APPROXIMATE PROPORTION OF CALORIES DERIVED FROM CEREALS
AND POTATOES IN TOTAL FOOD CALORIES IN 52 COUNTRIES,
1933-38 *



* M. K. Bennett, "Wheat in National Diets," *Wheat Studies of the Food Research Institute*, October, 1941, XVIII, 54.

lution or general progress in a welfare economy and (2) the dictate of the human palate, which registers and most ably and insistently expresses the body's new requirements under changing working and living conditions. Indeed, in their enthusiasm for progress in nutritional science, which is understandable and in part justified, many people seem to forget that the remarkable dietary changes for the economically most advanced western nations have come about during the last hundred years. Up to very recent years, these changes occurred without being piloted or fostered by science, but rather as a result of improvements in purchasing power among the working populations, and the progress in food production, transportation, and processing, and in the utilization of world-wide resources of feed and food production. People eat essentially what their palate likes. The United States is perhaps the only country where advertising of food and public efforts toward nutritional education, combined with the desire of sedentary workers to keep slender and fit, have made some inroads on the diet. Yet even here certain trends run contrary to all educational efforts, notably the high consumption of sugar, white flour, and liquor.

These dietary trends open new frontiers for agriculture. During the last three generations the aggregate value of all the food consumed in the western nations substantially increased. This means that although the people did not eat more of everything and probably eat less calories, the agricultural market has widened and with it the total agricultural income. More and more vegetable carbohydrates and vegetable proteins were fed to animals and converted into animal products. Since the detour via the animal causes a loss of seven- to nine-tenths of the calories in the foods fed, more crops must be grown to supply the same number of people with the same amount of calories. If, at the same time, the population continues to increase as the per capita real income improves, agriculture enjoys a growing demand for more valuable food.

During the war the governments and the people in the blockaded areas of the world had no choice but to turn the clock back many decades and to force national diets back to a more primitive level. For the reconstruction of agriculture it is most desirable that the various nations should be enabled to return to the diet which the population attained in prewar years, and later to resume the gradual

long-run shift toward a more balanced diet with greater variety and greater digestibility.

This shift would create an opportunity for European farmers in the industrial countries to expand their animal husbandry to prewar status or beyond. Urban consumers are going to want to eat fewer potatoes, dry peas and beans, and less bread, but bread made of white flour. At the same time they will want to eat more milk, cream, butter, cheese, margarine, beef, veal, pork, eggs, poultry meat, and more fruits—particularly citrus fruits and bananas.

Whether the urban people will be able to satisfy these wants and whether the farmers will be able to supply the urban people will be decided essentially by the employment available in nonagricultural occupations. Better nutrition will inevitably result from a higher rate of industrial employment, provided that agriculture functions properly and can respond to a strong demand for better food, and that whatever cannot be produced domestically can be imported.

Improvement of Nutrition through Public Policies

The history of the industrial revolution has shown that as real income increased the nations that succeeded in improving the welfare of their people by greater productivity of human labor have also been able to improve their diet. It is nevertheless true that the population of no nation has yet achieved an entirely satisfactory nutritional status. Undernutrition, i. e., an insufficient supply of calories, is rare among the wealthier nations; but malnutrition, or imbalance between nutrients in the diet, is common—particularly among the low-income groups. Malnutrition is much more widespread in the poorer nations, and there a large segment of the population permanently or sporadically suffers from undernutrition. These conditions often exist simultaneously with burdensome surpluses of food in the markets and efforts to curtail production.

Undernutrition and malnutrition have, quite aside from the human suffering they involve, many evil economic, social, and political effects. They stunt the growth of the young, prevent adults from working efficiently, cause diseases, lower the public morale, and foster political radicalism.

Of course, as soon as all these deplorable by-products of inade-

quately distributed and utilized food supplies and improperly used food resources became realized, strong efforts were made to eliminate by public action the worst features of undernutrition and malnutrition.

Shortly after World War I, several European countries began to study the impact of low incomes and numbers of dependents upon the diet of the individual by means of an analysis of the household budgets of laborers and employees. In England, feeding school children luncheon meals was begun in 1906; and serving milk at school started in 1908. The relations between the health conditions of particularly the lowest income groups and the people's diet in England became the subject of further investigation and research. Only two years after the close of World War I agriculture in overseas export areas including the British dominions and colonies, began to feel the effects of oversupplies in the markets and overproduction of wheat and pork. Sir John Orr, the director of the Rowett Research Institute of Scotland, and Mr. F. L. McDougall of Australia, two of Britain's leading proponents of the idea of advancing public health by means of public food policies, induced the League of Nations to adopt a more aggressive international program for grappling with the project of utilizing agricultural surplus production for better health.

The League's International Labour Organisation (ILO) and its health section had done some preliminary research work on national diets in various member countries. In 1935 the League acted upon the suggestion of Australia's high commissioner S. M. Bruce, and established the Mixed Committee on Nutrition, composed of some of its own representatives, of food and nutrition experts from various countries, and of representatives of the ILO and the International Institute of Agriculture. While the United States struggled to establish effective controls against agricultural overproduction, the Mixed Committee of the League solicited the organization of corresponding national committees on nutrition from the member nations, with the avowed aim of sooner or later obtaining action that would diminish undernutrition and malnutrition. These efforts continued until the outbreak of the war, and the national committees of many countries began to function.

In the meantime, the United States launched a program of action to make the best of burdensome surpluses of food by distributing some of them to low-income families. In 1939 the Department of Agricul-

ture established the Food Stamp Plan which supplied low-income families with additional purchasing power earmarked for specific food commodities.² This fairly popular plan was expanded within two years from an initial service for 51,000 persons to one for 3.7 million. In a number of American cities surplus fluid milk was distributed with federal subsidy to families on public relief. The task of disposing of surplus food stimulated the launching of a nation-wide school lunch program in 1937. Beginning with some 4,000-odd schools and 300,000 children, by 1941 the program embraced 67,000 schools and 4.7 million children. In 1942 the Food Stamp Plan was discontinued, but the school lunch plan was perpetuated. For the fiscal year 1944-45 the Congress appropriated \$50,000,000 for federal support for those meals which are supplied to the children free of charge.

These new ventures in public policy are mentioned here merely as manifestations of new trends of thought which have emerged from the last depression in all countries that suffered much from its destructive impact. The people (workers and farmers, as well as intellectuals) revolted against the paradoxical impasse of having the most powerful means of production lie idle, side by side with willing workers who had been laid off as unemployed, and with consumers needing and wanting goods but unable to obtain them because industries were idle. The revolt led to the powerful conviction that all economic adjustments that attempt to mitigate the effects of depression by operating an economy of scarcity with more social controls from the top are wrong and ill conceived. Moreover, it was felt at last that the real attack upon the evils of depression and unemployment must be directed toward an economy of abundance and the balanced full utilization of all economic resources. Imbedded in this philosophy is the belief that the human race is able to create a world in which at length all the people in every nation will have at least enough to eat at all times—a situation that has been closely approximated by the leading western nations. These ideas have so inspired the public in Great Britain and the United States that President Roosevelt incorporated them into the four freedoms as "freedom from want." Unfortunately this term ambiguously points up "want" instead of "need" and sets the goal with reference to "want" in general. Yet it appears that the

² U. S. Dept. Agri., *Economic Analysis of the Food Stamp Plan* (Washington, D. C., 1940); and Margaret G. Reid, *Food for People* (New York, 1943), pp. 400-415.

common man thinks of the absence of the direct need when he hears about "freedom from want."

Continuing the promising work of the League of Nations Mixed Committee on Nutrition, and again acting largely upon British suggestions, the United States arranged for a United Nations Conference on Food and Agriculture. The Conference was held at Hot Springs, Virginia, from May 18 to June 3, 1943. It treated the wide field of public policies for the improvement of the health of all nations through a better diet, believing strongly in the possibility of real progress, but in no way swept off its feet by undue optimism. In its final act the Conference laid down in great detail its agreement on the nature of the problems of improving national diets, diets of vulnerable groups, malnutrition and deficiency diseases, as well as its recommendations for further analysis and action. Some of the basic observations and principles may be cited.

The Conference declared its belief that "the goal of freedom from want of food, suitable and adequate for the health and strength of all peoples, can be achieved."³ It stated, furthermore: ⁴

There has never been enough food for the health of all the people. This is justified neither by ignorance nor by the harshness of nature. Production of food must be greatly expanded; we now have knowledge of the means by which this can be done. It requires imagination and firm will on the part of each government and people to make use of that knowledge. And again (*italics mine*): ⁵

The first cause of hunger and malnutrition is poverty. It is useless to produce more food unless men and nations provide the markets to absorb it. There must be an expansion of the whole world economy to provide the purchasing power sufficient to maintain an adequate diet for all. With full employment in all countries, enlarged industrial production, the absence of exploitation, an increasing flow of trade within and between countries, an orderly management of domestic and international investment economic equilibrium, the food which is produced can be made available to all people.

These principles are in line with sound economic thought and experience. The emphasis is properly laid upon the ordinary procedure

³ U. S. Dept. State, *Bulletin*, June 19, 1943, p. 552.

⁴ *Ibid.*

⁵ *Ibid.*

for diminishing poverty, and not on palliatives of public subsidies for the free distribution of food or food ingredients.

In order to dissociate itself entirely from utopian plans for improving national diets by means of gifts from the wealthier nations, the declaration specifically says: "The primary responsibility lies with each nation for seeing that its own people have the food needed for life and health; steps to this end are for national determination. But each nation can fully achieve its goal only if all work together." This recognition of the chief political axiom implies not only that the diet of the nations cannot and should not be reformed in line with uniform international standards, but also that it must be developed on the basis of national food resources and food habits. There is no need to convert the Japanese, the Chinese, the Malaysians, or the people of India to a western diet. Asiatic diets may be just as well balanced nutritionally and just as adequate as the best western diets, even if milk and dairy products contribute a small portion of essential nutrients or are not present at all. While there is little mention of it in western literature, it is a significant fact that some of the first vitamins were discovered by Japanese scientists, and that extensive research on low-cost balanced and adequate diets has been carried on in Japan ever since the late twenties.

At Hot Springs the foundation was laid also for continuing the improvement of people's nutrition among the United Nations. The Conference recommended that all governments establish national nutritional organizations in so far as they do not already have them. It resolved to establish an Interim Commission on Food and Agriculture for carrying out the recommendations of the Conference. This commission held its first session on July 15, 1943, in Washington, D. C. One of the functions assigned to it is that of formulating and recommending for the consideration of each member government a specific plan for a *permanent organization on food and agriculture*. Late in summer 1944 sufficient progress had been made in drafting the plan to deem it justifiable to expect the inauguration of the permanent organization, officially abbreviated FAO (Food and Agricultural Organization), by the end of 1944 or early in 1945.

FAO will eventually become an international advisory, co-ordinating, and research agency for all affairs concerning food and agriculture. The adoption and execution of food and agricultural policies

* *Ibid.*

will necessarily remain in the hands of individual governments. However, the exchange of knowledge and experience, the continuous comparative study of prevailing conditions in agriculture, health, and nutrition, the exchange of personnel and the focusing on problems which merit the greatest efforts toward improvement by a competent staff under the leadership of men of international reputation, will do a great deal to influence the way in which the nations shape their policies. It is to be hoped that FAO will have its headquarters outside the boundaries of the big powers, and that the chief work will not rest with a mammoth central office, but will be assigned to a number of regional branch offices for different parts of the world. As one of these branch offices, FAO should incorporate into its structure the International Institute of Agriculture in Rome, founded in 1905 by the late David Lubin, a far-sighted American merchant of Sacramento, California.⁷

Once the FAO begins to function, considerable corrective action may eventually be expected by national governments, partly in continuation of policies and procedures adopted in prewar times and during the war, partly in response to the organized international conference on subjects dealing with food and agriculture.

During the war many governments were compelled to take a more active interest in the diet of the people, if for no other reason than just to protect them from deteriorating health and disease. The fortification of flour and margarine with vitamins was adopted by several European countries even before the war. During the war rationing shifted the direct responsibility for the protection of health through the composition of the diet from the people to the government. In all countries where the civil service was alert, precautions were taken to reserve scarce protective foods, particularly milk and dairy products, primarily for the most vulnerable consumer groups—expectant and nursing mothers, babies and children, convalescents, coal miners, and certain other heavy workers. Many European governments during wartime distribute to these priority consumers such vitamin-bearing materials as cod-liver oil, vitamin C tablets, and fruits and

⁷ The reader interested in the foundation of the International Institute of Agriculture in Rome will find the record in the absorbing book *David Lubin, A Study in Practical Idealism* by Olivia Rossetti Agresti (Berkeley and Los Angeles), 1941.

fruit juices—some of them free of charge. Canteen or "in-plant" feeding of workers which was practiced by many industrial countries in some of their most progressive factories and many public offices, has spread widely and has done its part to supplement the diet of workers in the white-collar class in a properly planned way. Public education about dietary and nutritional questions has been advanced under the great nutritional impetus of war, because all governments had to mobilize the active interest and co-operation of the consumer in order to make the public programs of food conservation effective and to maintain health under less liberal rations.

It may be expected that more knowledge and experience have accrued along this line among administrators as well as the general public. It seems justifiable to expect many of the practices adopted and approbated in times of emergency to be carried over to the peace. Yet we do not believe that the sum total of all such measures will anywhere approach the progress which may be expected by means of normal changes in nutrition whenever they become economically feasible, through the improvement of purchasing power, especially among the low-income groups.

Population Pressure, Agriculture, and Nutrition

The classical economic theory, especially that advanced in the works of Malthus and Ricardo, assumed that due to the supposed "law of diminishing returns" in agriculture and the progressive response of human fecundity to increased food supplies, the population growth would outrun the possible increment in food production. The relative shortage of food was supposed to keep the further increases in population in check, or else the curtailment of population growth by other causes would establish equilibrium between food resources and the population which has to live from them.

Up to World War I the Malthusian doctrine was considered the indisputable and valid explanation of the basic conditions under which agriculture operates and under which the scarcity of food is inevitable. Since that time it has been recognized that progress in agricultural technology and scientific research in all the disciplines concerned with the production of plants and animals has made it possible to operate in agriculture with increasing returns on the human effort

applied, in spite of the fact that there are rather narrow limits to the possible increments in physical yield per plant, per animal, and per unit of land.

The western nations have developed such a large potential capacity for producing food that the major problem now, and for decades to come, is to avoid an overexpansion of food production. Economic progress has led to more urbanization, and with it to a declining birth rate, while at the same time the techniques of agricultural production have been substantially improved. Between 1800 and 1900 Europe's population increased from 190,000,000 to 400,000,000 in spite of heavy emigrations. In the first two-thirds of that century the rural people who had migrated to the cities maintained their high birth rates. Improved food supplies, sanitation, and medical aid reduced death rates among children and adults. In the late nineteenth century and in the twentieth, birth rates began to decline except in the Slavic countries and in Italy.

Yet today the unutilized food production reserves in Europe are still greater than the probable increase in population. Hence economic progress will both further slow down the birth rate and thereby improve the balance between food resources and population, and improve the diet of the people as they succeed in earning a higher real income.

It has been pointed out repeatedly that this does not necessarily hold for large parts of Asia where immense fecundity responds to increased food production, creating even greater population pressure. In India the population statistics show an increase of 50,000,000 people in the period from 1930 to 1940, although tuberculosis, the disease typically linked with undernutrition, causes 500,000 deaths a year.⁸ It is possible that the statistics are faulty and highly exaggerate the actual rate of growth. Even so, it is a fact that in India as well as China, Java, and to a lesser extent Japan, the broad application of preventive and curative medicine coupled with the maintenance of high birth rates and a low income will for a long while severely limit the share of the individual in improved food supplies. The frugality which the low productivity of human labor imposes on the masses of Asia will prevent large imports of food from other continents. In the United States it is popularly claimed that in Asia the struggle against appalling poverty and short life span will be futile as long as the

⁸ *Indian Information*, April 15, 1944, XIV, 391.

people of Asia do not learn to restrain their fecundity. Such reproaches and admonitions imply that the western nations, especially the people in the United States, have actually restricted their birth rate by some sort of policy and with the intention of improving the food situation or the economic situation in general. Neither implication is tenable. In the western countries birth rates have declined as a secondary result of industrialization and urbanization, and the change in economic and social standards which accompanied the process. And even in Europe it has taken from two to three generations for the decline in birth rate to become marked.

Popular American ideas of relieving population pressure by means of social missionaries preaching the gospel of birth control and spreading knowledge about contraceptive techniques naïvely miscalculate the power of the basic biological dynamics in the life of nations. The only realistic approach to the solution of the population problem in Asia is to be sought in the direction of economic progress. In the United States the economically most backward regions of the deep South still have the same or similar population characteristics among the poor whites and Negroes that prevail in Asia. Only as economic progress penetrates into the backwoods will high birth rates decline. It may take generations for an advancement in the agricultural and industrial economy of Asia to result in a greater margin of food consumption by individuals.

The difficulties besetting the reconstruction of agriculture in China, and in Asia generally, lie in the fact that a surplus of cheap manpower, coupled with a scarcity of high-cost machines, is the greatest barrier to any improvement in the productivity of human work. A scarcity of labor, either naturally or artificially created, is the greatest incentive for the application of man's ingenuity to the task of making work in industry, agriculture, or commerce more productive. The amazing progress in the productivity of labor in the United States has become possible through the persistent shortage of labor from its settlement up to this day. The shortage is artificially maintained by the restriction of immigration. Theoretically it seems not impossible to enforce minimum wages in Asia, and elsewhere, under conditions of labor surplus, in order to break the vicious circle and induce all employers to utilize labor in a more efficient way. Minimum wages artificially create a situation which penalizes waste of manpower and again stimulates its more efficient use by employing more capital as well as better

management. Whether they can be enforced in the countries that need them most is highly doubtful. It takes a high standard of law abidance and law enforcement to make such measures effective.

Without efforts to force a more efficient use of manpower the oversupply of exceedingly cheap labor will inevitably retard the introduction of labor-saving tools and machinery in agriculture. Education and vocational training, the introduction of better seeds and of better breeds of animals, of more efficient insecticides and fungicides to fight plant diseases and pests, and the expansion of agricultural co-operation will be the chief methods by which to reconstruct agriculture when the war is won. In the Near East as well as the Far East the conquest of such devastating pests as locusts and crickets would do a great deal to diminish the frequency of famines caused by crop failures.

Europe's Political and Economic Future and the Prosperity of the World's Agriculture

In view of the obstacles that Asia will have to overcome, the future of Europe and the reconstruction of her highly developed systems of agriculture assume so much the greater significance. For, in spite of the ravages of this war, Europe will economically, politically and intellectually retain her place as the mother continent of western civilization.

Industrial development in India, Java, the Philippines, and China may proceed at a much more lively pace than in earlier periods. The rapid industrialization of Russia and the even more rapid and successful development of Japan indicate what modern organization and technology can accomplish. Yet, even if in some zones of Asia more rapid progress should be made in developing industries, the oversupply of labor will keep the rise in purchasing power of the masses low, and the world's great agricultural exporting areas in the Western Hemisphere, Oceania, Malaysia, and Africa will find only limited agricultural markets in those areas.

The Continent offers the greatest potential market for food, feed, and fiber exports. To what extent such opportunities can be utilized depends entirely on the Continent's industrial future. If political reconstruction should re-establish the nations chiefly within their pre-Munich boundaries, it seems possible that economic revival will

begin with the restoration of ocean-borne trade, and that countries such as France, Belgium, Holland, Denmark, Austria, and Czechoslovakia will be able to rebuild their industries with a substantial volume of foreign credit. That Germany will be able to receive similar foreign aid seems most unlikely, though political arrangements are not impossible which would make such aid profitable for the victorious powers. If after occupation she should regain the status of a sovereign nation within the 1933 boundaries, but be forced to rebuild her cities and industries without substantial foreign aid, Germany's economic policy would be dominated by the need of her population alone to form the huge capital reserves that reconstruction would demand.

This process of capital formation will be the crucial question for all the countries where the war has wrought wholesale destruction. If borrowing capital from the outside be excluded, the only possible way to re-form capital quickly would lie in the forced enlargement of the rate of savings. Production must be stimulated by drawing all the available manpower into full employment with long hours of work, by concentrating the work into production goods, and by restricting consumption to the utmost. In essence, this would mean that the conditions of a wartime economy would have to be retained, the chief difference being that instead of war materials, factories, buildings, and the machines for a civilian economy would be built. In order to concentrate on production goods and to form capital, the people would have to be forced or induced to forego any luxuries, even modest ones, and to forego any material improvement in their consumption of essentials as well. In terms of food this will mean that the least expensive but nutritionally bearable diet would have to be maintained. Rationing would probably be the method by which to accomplish that and to safeguard public health. High interest rates and high taxes fit into such a situation.

In order to obtain the minimum of raw materials for reconstruction from abroad, a country in such circumstances would have to restrict the import of nonessential goods to the utmost and to stimulate its exports. This could be done by keeping the wage and price levels low, and by imposing high import duties and bounties on exports, or by devaluing (inflating) its currency, if all other measures proved to be impractical or were prohibited by the decree of the victorious United Nations. If Germany, for example, should be prevented from

establishing import duties or excise taxes on imported nonessential goods, the only choice left would be currency inflation. The latter would reduce the purchasing power of the currency abroad and thus restrict imports, while it would give foreign currencies a higher purchasing power for German goods and therefore would stimulate exports, at least to the extent that the margin was not eliminated by foreign retaliation.

Reconstruction with the use of domestic resources only involves the maintenance of a wartime diet as well as the enforcement of domestic food production. If land and labor are available but capital is short, full employment in industries will be difficult to attain—to the extent that the necessary plant capacity is not established. Therefore, agriculture will become a welcome outlet for the employment of labor to produce at home all the essential food requirements. The capital needed per worker employed in agriculture is only a fraction of the requirement per industrial worker.

The case of Germany illustrates the tendencies that a refusal to lend substantial foreign aid to industrial reconstruction will inevitably bring to any other country as well. Even if the denial of foreign aid is only partial, the economic requirements of reconstruction are so powerful that no country could escape taking measures similar to the ones outlined.

If the United States and Great Britain should choose a policy of concentrating all their efforts on reconstructing their own economies in collaboration with the Western Hemisphere and the British Empire, and of abstaining from any effort to bring Europe quickly back on its feet, the effects would be painful for Europe as well as for the rest of the world. Europe would drift closer to food autarchy, and thereby force depression upon farmers in the agricultural exporting countries. People in Europe would be forced to tighten their belts in every sense for a generation in order to form capital, which is overabundant in the United States. At the same time Europe would be in a position to create full employment until the worst war damages were repaired, while a policy of keeping hands off European reconstruction would aggravate the employment problem in the United States.

European farmers would be able to close the gap of the food deficit, but the low purchasing power of consumers would prevent their shifting to the higher-priced products that could be consumed in

the event that a full integration of the Continent into an expanding, freely communicating world economy were brought about.

Another political possibility also needs consideration. If half of Germany, Poland, the Baltic states, Czechoslovakia, and the Balkans should come under Russian political and economic domination, either by action at the peace table, or as the result of revolution, or without any inner upheaval and by the free will of the people, the entire economic policy of this large area may change drastically. Industries might find their chief market in Russia's vast construction program, while agriculture might be reorganized according to the Soviet collective pattern. The structural changes which this sort of political reorganization would involve are of such scope that we despair of speculating about even the most global trends that would follow. The continuity of the history of central Europe would be broken to the core and the world would feel the repercussions in more than merely an economic sense. A new era, charged with more conflict than ever before, would begin.

If, however, Europe should not cease to exist as it has existed for centuries, and should retain its western identity, it seems incontestible that the reconstruction of the world's agriculture could be accomplished with relative ease provided the industrial reconstruction of Europe proceeded rapidly, and that the Continent could soon be re-integrated into the world's trade in raw materials and industrial goods. The key to the reconstruction of agriculture, in the United States especially, lies in the revival of Europe's industries.

Postwar Planning in Agriculture: Its Promise and Its Threat

In the first four chapters, we showed how agricultural planning was haphazardly begun in World War I, how up to 1928 planning was abandoned, and how, from then until World War II, planning was adopted in many countries and developed to a high degree. World War II has made total planning inevitable on the part of the major belligerents and has led to a highly advanced stage of international planning for food and agriculture for the duration of the war.

After World War I, farmers in all countries urged their governments to abolish all the planning measures and to withdraw from the markets all actions of intervention. Farmers were no different from other economic groups, and since there was a widespread desire to

return to the normal economy of the 44 years of peace that preceded the war, all governments actually did abolish planning.

It is questionable whether this will happen again when World War II comes to an end. The situation has changed profoundly in all modern agricultural countries and even beyond their borders. This change came about in the thirties, for the most part, from the great depression onward. It consists of a change in attitude on the part of farmers and governments toward the risk of freely moving prices and of free competition. As well-organized political pressure groups, supported by governments highly sensitive to that pressure, the farmers in the English- and German-speaking parts of the world converted the markets for their products from freely competitive ones to markets with publicly controlled or supported prices and restraints to competition. This sweeping change was not dependent on any specific form of government, or bound to any specific situation in the market. It carried from a Republican into a Democratic administration in the United States; and from the Weimar Republic through the nazi regime in Germany; and without any change in administration in Canada, Australia, Holland, and Switzerland.

During the war, all the markets have become more strictly planned and centrally controlled than ever before. The necessities of war leave no alternative. However, the war will have a most significant effect upon the future course of agricultural policies. The farmers again have had experience with planned economy in this war. Their reaction to it afterward will probably differ greatly from that following World War I. This time, many countries have simply carried on in war what they had already practiced for many years. Planning of the markets of many basic agricultural commodities had already been made effective, and price support or price controls were actually in effect for the purpose of improving the farmer's income. In many exporting countries, agricultural planning performed the duty of keeping production in check and of avoiding the worst features of food and fiber surpluses. In some importing countries, planning attempted to expand domestic production, but had yet to struggle with the pressure of imports on total supplies.

Everywhere except in the Japanese-conquered areas of the Pacific, the war created a need for more food. It spelled prosperity for the farmer—in the United States, Canada, South America, Oceania, and Great Britain and to some extent the farmer on the Continent. De-

pression hit mainly the farmers on the big islands and the mainland of Asia who lost their export markets. In most countries, this farm prosperity is being managed and administered by governmental war planning. Farmers have been assured profitable prices long enough in advance of the sowing season to influence their crop plans. Various techniques have been applied to make good such assurances, but most of them have brought the government into the business of buying, processing, storing, and selling agricultural commodities in the market as an active agent. Public offices have organized the labor supply, machinery, fuel, and fertilizer, and protected the farmer from excessive costs for the things he needs.

Perhaps the most important change has been experienced on the Continent. It was severed from the world by the Allied naval blockade and within a year was subjugated to central control from Berlin. During the first five years of the war the German economic high command established some form of planning for agriculture wherever its dominion reached. The essential features of this planning are guaranteed profitable "forward prices" for all major farm products, prices fixed through all stages from the farm through wholesale and retail, differentiated for specific economic regions, and with an additional guide in the form of production goals, to regulate farmers' decisions about specific acreage. These measures have been supplemented by delivery quotas assigned to each farm, by premiums for their fulfillment ahead of time, and penalties for delinquency. As farmers have been coached and aided all along, the trade in agricultural commodities has been systematically squeezed. As a result, a substantial reduction in the numbers of people engaged in the food trade and distribution has occurred, along with an increase in the efficiency with which the economy works. These policies have been carried into nearly all the countries under German domination. Many governments have adopted the Russo-German procedure of establishing long-range plans for agriculture. Most of the European countries have drafted such plans, some four, some five, and some ten years long.

The fact that the Germans have co-ordinated Europe's agriculture for their own purposes of warfare should not cloud the foreign observer's judgment. While there can be no doubt that all nations resent political domination and economic exploitation by nazi Germany, and want to be rid of it, most farmers will have many objections to the restoration of free competition and freely moving prices. What

farmers seem to want all over the world, particularly in Europe, is the combination of a maximum of political and managerial freedom, and a maximum of economic security and protection. They want fewer policemen, government stool pigeons, and informers, less exacting penal codes for violating ordinances connected with central planning, to be sure—but they also want guaranteed price floors for their products, and markets so organized and publicly controlled that the risk of losing money under the impact of oversupply will be reduced to a minimum.

There is nowhere in countries of the free or enemy-occupied United Nations or neutral or enemy countries, any indication that farmers have any interest in the restoration of free competition and the withdrawal of the government from control or interference in the agricultural markets. Hence it is our assumption that the tendency will be to let the government plan and direct the agricultural economy so as to guarantee prices and the profitability of farming. Farmers will compromise on the methods of public control of agricultural markets, but not on their cherished belief that the public is obliged to guarantee the farmer a high and stable income. If our appraisal should be correct, it follows that the government will continue to trade in agricultural products, that the prices of farm products will be political prices rather than economic ones based on costs, and that agricultural production will be steered from national central planning agencies. Such central direction will lead to faster adjustments than under the rule of free competition, because a greater arsenal of research, information, and measures to implement adjustment policies will be brought into play, but it may also delay the sort of basic adjustments which are economically sound and desirable, because of political pressure.

In the absence of a well-co-ordinated international economic policy for the Continent which would utilize all the resources for the welfare of all nations concerned, planning in agriculture will inevitably serve the selfish interest of national farm pressure groups first. It is easy to underrate the serious threat to a sound reconstruction of agriculture in Europe which will arise from the political opportunity to use the machinery of agricultural planning for purposes of economic nationalism. The methods for establishing a better income for farmers in food and fiber importing countries are well

known. The more they are exploited the worse off will be the agrarian countries, for they need export markets. If industrially depressed conditions should arise, farm pressure groups may be expected to force their governments to stabilize farm income by price support measures which involve the curtailment of production. The result would be a much more serious social impact upon the food situation. Under such circumstances it would be much more reasonable to maintain agricultural production and to grant farmers subsidies in the form of price deficiency payments for a predetermined volume of desired production.

The very fact that the mechanism of fixing prices and manipulating the entire agricultural economy of a country is well known today strengthens the agrarian forces of economic nationalism. Whether or not this newly acquired ability of nations to plan, steer, and control the production of food and farm-grown fibers will become instrumental in a better utilization of the world's agricultural resources, will be determined by the degree of international economic co-operation accomplished by the victorious great powers. Even if freer trade and freer movement of capital do evolve in the coming peace, powerful efforts and shrewd political moves will be needed in each country to prevent the use of the agricultural planning machinery for ends of short-sighted protectionism.

This issue strikes to the heart of the very serious question of the extent to which the sovereign people in a democracy are really able to pursue economic policies guided by the aim of the optimal welfare for the greatest number. Planning means that all economic affairs are subject to political decision; under free competition political interference is an exception. Under agricultural planning as it is executed today, for example in the United States, the price of cotton is no longer determined by the supply-demand relationship developing under the heteronomy of various factors; it is decided by vote in both houses of the Congress. If such voting is controlled by the pressure of vested interests, the measures adopted may violate the requirements of a sound policy of national welfare. There is ample evidence that during the past decade of planning, agricultural as well as other economic policies in the United States have too often been influenced by the choice that would be least resisted by the legislators, instead of by sound over-all considerations of national welfare. Even

during the war, with its high-pitch patriotism and demonstrations of civic virtue, it has been impossible to adopt the proper tax policies which would have just about stopped inflation.

We touched upon this profound dilemma in the democratic form of government earlier when we spoke of the great difficulty in overcoming resistance to the lowering of import duties. Ultimately it boils down to the question whether, in the age of economic planning, democracy is still capable of electing and endorsing statesmen, or whether it must necessarily deteriorate into a conglomeration of selfish pressure groups who shape policies by logrolling and compromise. The pragmatic answer to such deterioration is not, as the incurable optimists assume, a perpetual muddling through with bargaining among the competitive pressure groups, but the accumulation of more and more power into the hands of the executive branch of the government. In Germany the deterioration of democracy in the hands of pressure groups culminated in rule by the dictatorial paragraph 48 of the Weimar Constitution before Hitler came to power. In France the same process contributed much to the collapse of national defense in 1940. In the United States the accumulation of more power into the hands of the president has been gaining momentum since 1933. Fighting the war has inevitably further accentuated the process. How much of this power will be returned to the legislative branch of the government will depend on the seriousness of the national situation after the war as well as on the performance of the legislature itself.

These observations may serve to indicate that the structural change which the wide-spread existence of agricultural planning has brought about constitutes just as much a menace to the adoption of sound reconstruction policies for agriculture as a promise to facilitate the execution of any of the reconstruction policies. The great ability to plan efficiently acquired in many countries will turn out to be a dubious asset unless the reconstruction policies manage not to be distorted by too many vested interests. If the shortsighted policies designed for national food autarchy or high protection of farms are not to begin, as soon as the guns cease firing, to undermine the economic foundation of the future peace and to distort the flow of goods and capital, gigantic efforts will be required on the part of the great powers actively interested in world trade. They must make it profita-

ble for the smaller nations to refrain from such nationalistic policies and costly to pursue them. This is the sole strategy available in the relations between sovereign nations.

Therefore, the responsibility lies first and last with the United States and its political leadership in international economic relations. This is still the world's chief issue, just as it was at the London Economic Conference. Great strides have been made during the war, but the extent to which bold moves made in recent years will actually lead to a policy in which the United States will receive payment in goods after the war is the crucial question. Economic isolationism is still strong and powerful in America, and upon her depends the future course of world economic developments and thereby to a great extent the durability of the peace.

It is a very popular practice in the United States to point out that Germany must be forced to abandon her agricultural protectionism, and that it is ridiculous for Switzerland to protect and subsidize the production of wheat; but the conversation shifts to other subjects as soon as the question is raised how much less justified is the high protection of American farm products on economic grounds.

The reader may feel that with such skepticism the author has let him down, after all that was said in Chapter VII. In view of that reproach, however, let it be emphatically asserted that today, as in the late twenties and early thirties, the road to a world economy which expands at a healthy pace is open and nothing is lost. But the opportunity to reduce international trade barriers, and to rebuild a world with the freest economic intercourse will undoubtedly be lost if it is taken for granted that after holding a few international conferences and setting up several international organizations, America has made her main contribution to the future peace. In fact, a great deal of the lofty and often romantic ideas about the coming era of international brotherhood among nations, entertained even by some administrators, proves merely that the real, hard hurdles that must be taken are not yet recognized. The solid resistance of the American farm bloc to a reduction in tariffs and the adoption of methods of farm income guarantees which are less obstructing to foreign trade constitutes but one of those hurdles.

International policies are not policies adopted and operated in a neutral zone among nations, but are the sum total of the foreign ends

of national policies. International policy must not be built around a system of moral postulates addressed to other nations, but must inevitably begin at home.

The Role of Education, Vocational Training and Research

Among the many approaches to progress in the utilization of agricultural resources, none is more important and none more promising than the public support of education and research. It is by no means true that agricultural progress stems exclusively from public educational policies. Agriculture has developed through the ages by means of native ingenuity and inventive genius of individual farmers and groups of farmers, and by the spreading of new techniques, new plants, and new breeds of animals. Agricultural technology has been most powerfully advanced by the migration of farmers who took with them their traditional skills, techniques, tools, and seeds, and whose methods were copied by their new neighbors. This cross-fertilization of knowledge and skills is, up to this day, the major source of the world's capital of agricultural technology.

Yet during the last 150 years organized research and education has become increasingly responsible for better farming wherever governments have learned how to use them. No more immediate and direct approach to the improvement of farming is available than the attempt to improve first of all, man, the chief production factor. No other public investment can ever pay better dividends than the provision for a large budget for agricultural education and research, and the competent administration of such programs. One of the chief requirements of political democracy is that equal opportunity be given to all citizens. In agrarian countries where the majority of the people still live as peasants, the possibility of establishing government of, by, and for the people is remote as long as education in general, and agricultural education in particular, have not laid the foundation for it. Agricultural education can do much to establish that basic equality of opportunity where it does not exist, and publicly financed research can strengthen it. The experience of many countries proves that it is possible and not too difficult to demonstrate the usefulness of agricultural education, even among illiterate farmers, and to induce the rural population to make use of the educational services.

The value of agricultural education and research must be measured

by the change they bring about on farms. The most resourceful institutions of agricultural learning and research, and the refined methods applied in both may only amount to wasted energy unless the results sooner or later become visible on farms. For this reason teaching must not only be applied to boys and girls of post-high-school age, but also simultaneously to practicing farm men and women. As the experience in many countries shows, the teaching of youngsters fails to have a direct effect upon farming, because so often too many years pass before the children succeed their parents in the actual management of the farm, and because the skeptical elders do not accept second-hand advice from their children. It is generally recognized, therefore, that applied adult education, including the so-called "agricultural extension service" of the United States, are the necessary complement of vocational training and education of younger people. The Continental institution of publicly supervised systems of farm apprenticeship for future farm managers and operators is another important link in a system of agricultural education, the value of which is not yet recognized in the United States.

Publicly financed and administered agricultural research in fields of the natural as well as the social sciences is one of the major services the government must render to agriculture, because of the prevalence of the family farm. If agriculture were organized in the form of large land-holding trusts and farm-managing corporations, it would be feasible for them to finance their own research work as did a number of the wealthy large estates in Germany.

As agricultural education succeeds in improving the professional competence of the farmers, and as applied research advances the technology on the farm, the center of gravitation in agricultural policy begins to shift from problems of production only toward those connected with the markets for farm products. As the government engages increasingly in planning and the public control of the market, it becomes one of the main customers of its own educational and research institutions, because it needs highly trained and educated civil servants, and it needs the results of market and policy research.

The work of agricultural reconstruction must depend and draw heavily on every phase of agricultural education and research. The restoration of agricultural schools, institutes of farm technology, colleges of agriculture, agricultural experiment stations and energetic action toward the resumption of their work is an obvious and im-

portant task, and one that will require considerable effort, time, and financial resources. Fortunately there are no other fields that lend themselves so well to international co-operation as do agricultural education, and even more, agricultural research. An international exchange of students, teachers, extension agents, and research workers could do a great deal to give effective aid to the reconstruction of agriculture. While the grandiose schemes proposed in the United States for the political "re-education" of European nations by American educators deserve the utmost suspicion because they promise to do immeasurable harm to the cause of the coming peace, it is a quite different case with agricultural education and research. Both are applied fields with practical professional ends of a universally recognized character. The war experience of the British-American Middle Eastern Supply Center, with headquarters in Cairo, has been most encouraging. The service rendered to the various nations of Asia Minor and northeastern Africa by agricultural experts from the United States and various parts of the British Empire are some of the outstanding accomplishments of this combined enterprise.

Progressive reconstruction work, moreover, requires even much more the expansion and development of educational facilities for farm folk in all countries where farming is still undeveloped. This again offers international co-operation an ideal opportunity in the long run. If one sees, for example, how far agriculture in Turkey has advanced in the last decade under the impetus of the government's astute policy of employing scores of experts, fugitive or evicted from Hitler Germany, or realizes how much South American countries have benefited from the exchange of experts with the United States, the implications of international support of agricultural education are obvious. It is to be hoped that the United Nations FAO will arrange for the international pooling of experience in agricultural education and research, and for an exchange of trained personnel.

Agricultural Co-operative Associations

Another field of activity will also rank high among the reconstruction measures. Since the eighties of the last century, nearly all countries have passed laws which enable farmers to organize themselves for various economic activities in the form of tax-exempt co-operative associations, and nearly all have some farmers' co-operatives. Only

in a few of them has agricultural co-operation become a vital part of the agricultural structure. Correctly interpreted, agricultural co-operatives serve to protect the farmer against exploitation by monopolistic elements in the trade of agricultural produce as well as equipment and materials which the farmer needs. They do this by creating co-operative business enterprises which establish competition, or re-establish it where it has been unfairly restricted. As long as the co-operating farmers adhere closely to the legitimate purpose of their publicly protected and fostered enterprises of self-help, and do not succumb to temptation to use them as monopolies against consumers, they can promote the welfare of agriculture a great deal. It is the opportunity to break down monopoly situations concocted against farmers, and not the supposed advantage of the so-called "non-profit" character of co-operative associations or the evil opportunity of cornering the consumer, which justifies the privilege of tax exemption which all governments have granted.

Countries with backward agricultural conditions usually have such a dearth of capital that usurers and loan sharks are the chief suppliers of short-term and intermediary credit to farmers. In Poland, some Balkan countries, China, and India, to name only a few, interest rates of 50 per cent per annum are commonly paid by farmers when they obtain needed credit. The best method of overcoming the deplorable situation which, characteristically enough, seldom makes the usurer wealthy, can be and in many countries has been remedied by co-operative agricultural savings banks.

In addition, co-operatives can combine educational services with their business and thereby are in a position to promote agricultural progress, often better than can any commercial agency, such as creameries, grain or seed dealers, cattle dealers, and other merchants and companies.

To the reconstruction of agriculture in war-torn countries, the existing co-operative systems offer one of the best opportunities to restore order and revive the normal functions of the farms. their sales, purchases, and money transactions. From a political standpoint nothing could be more desired than the restoration to full autonomy of the farmers' co-operative associations in all countries, including those of Axis nations and their satellites. Self-government, organized co-operation, and self-discipline of groups constitute the essence of political democracy.

On January 19 and 20, 1944, the International Co-operative Reconstruction Conference was held in Washington, D. C. for the purpose of preparing for a better world-wide collaboration among co-operatives, of drawing public attention to the value of producer and consumer co-operatives, and of urging the United Nations to make the most use of the resources of the co-operatives in many countries for purposes of reconstruction. No less than 22 nations were represented. Following are summaries of two of the 14 recommendations approved by the conference: *

- a) The establishment of an International Co-operative Trading and Manufacturing Association, beginning with two divisions, food and petroleum, with the view of soon adding divisions for agricultural implements, seeds, and hatching eggs; and the establishment, when conditions warrant, of an international co-operative credit institution to assist, among other things, in the financing of international co-operative trade.
- b) The setting up by UNRRA of a central fund for loans to co-operatives in other countries for rebuilding physical facilities, for repairing such facilities, and for replacing inventories, such loans to be made on a basis similar to that used by the Farm Credit Administration in making loans to co-operatives in the United States.

Again, as in the realm of education, an international exchange of experience and ideas and mutual assistance could very well be applied to the broad field of agricultural co-operation. The initiative and responsibility would in all cases lie with the national governments and the farmers who want to organize themselves as co-operators, but international consultation could accomplish a great deal. To build successful co-operative associations requires much less a faith in the spiritual magic of "co-operation" than outright knowledge and skill in managing a modern business enterprise. The latter is susceptible to international exchange of principles, methods, and experience. Under the auspices of the United Nations FAO it should be possible to make arrangements for much closer international collaboration in matters of agricultural co-operation than was attempted by the League of Nations or the Horace Plunkett Foundation.

* The Co-operative League of the United States of America, *Co-ops Plan for the Postwar World* (Washington, D. C., 1944), pp. 34-35.

The Need for Changes in Land Distribution

Agricultural reconstruction must also come to grips with one of the thorniest jobs known to agricultural policy—the correction of the present distribution of land in so far as it hinders the improvement of the welfare of the cultivators or the efficient utilization of productive resources and human labor. Economic and social progress are practically impossible without the safety of the institution of property, as its restoration in Russia, even on the collective farms, has so impressively illustrated. Adjustments in the distribution of land by public action inevitably involve the security of property and, therefore, require cautious and wise action. For the same reason, such action must be determined and bold because it invites political intrigue and even revolt on the part of those whose property rights would be affected.

Europe, excluding 1939 Soviet Russia, represents the largest area in need of adjustments in land distribution, in two ways: (a) the large estates need to be abolished; (b) the scattered strips of land belonging to small farms need to be consolidated. Each task is difficult. The problem of the large estates of Germany, Poland, Hungary, and Spain has already been presented. The need is just as much political as social, while it has much less direct economic importance. To distribute the land held and operated by the owners of the large estates means abolishing political and social privilege and replacing a low-grade farm labor class by self-respecting family farmers. Economically it leads to more intensive and advanced use of land, with a greater proportion of protective food and a lesser one of energy food. In all the four countries mentioned, the reform is long overdue. It has been thwarted by the political power of the owners of the landed estates. In Germany as well as in Spain the doomed republican regimes tried in vain to abolish the estates. In Poland the dictatorial regime of Pilsudsky dissolved and settled only the estates of the German minority, then stopped the reform. In Hungary a few estates were subdivided for the settlement of veterans, but the reform did not progress beyond that stage. Reconstruction of agriculture in these countries must necessarily dissolve these stumbling-block residues of the feudal age. Naturally, it will not be enough to seize the land and to distribute it among applicants for family farms. If

the new settlers failed because of too high debts, too little competence, incompatibility as a group, or for various other reasons, that failure would condemn the government undertaking the reform and strengthen the opposition of the large and politically powerful estate-owning caste. In Spain the difficulty is greater than in the other three countries. The subdivision of estates and their settlement by family farmers require large-scale irrigation projects, education, and professional consultation for the peasants, provisions for low interest rates and long-term credit, the organization of marketing co-operative associations, and the development of leadership among the settlers. In all countries it is a major political operation which will be carried through only if a new administration puts its full *élan* and political momentum behind the reform and does not waver until the reform is completed.

In none of the four countries is a real political and social house cleaning of agricultural affairs possible without this reform. In none of them will the family farmers themselves be able to assume responsibility for the national agricultural policy and the entire educational and research system, or to shape that policy according to the needs of the self-managing and working dirt farmers so long as the large-scale entrepreneurs represent so large a part of their national agricultural resources and output.

If American readers suspect this of being an unjustifiable overstatement, they might investigate the reason why, in Louisiana, a state that has 140,000-odd small and medium-sized farms, most of the work done by the large agricultural experiment station is devoted to two crops—sugar cane and rice, both of which concern a few corporations and only the few wealthiest farmers in the state. Both sugar cane and rice producers could well finance their own research. The 140,000 small farms very much need the allocation of the great bulk of public research resources for tackling the specific problems crucial to their own well-being and cannot afford to pay for any part of it.

The other reform in land distribution needed on the Continent—the consolidation of scattered strips on small farms—is administratively more difficult than the settlement of family farmers on large estates, but it is not a serious political issue. The dismemberment and dispersion of the acreage owned by the farmers into various small

tracts, so typical of many European areas, originated from the customary law of real division of the estate among the heirs. Since in most cases the deceased farmer left no will, the estate was divided according to the law, and all legal heirs were—by custom or the codified law—entitled to their share in kind, i. e., real estate. Within a few generations the most weird quilt-pattern of property evolved in each rural community. It must be realized, though, that where the densely clustered village is the form of farm settlement, and wherever the land has rolling topography, it is impossible to have the land immediately adjacent to the farmstead in one coherent piece. Moreover, strip farming, or the alternation of various crops in narrow strips following the contours of the land, is a procedure necessary to avoid soil erosion. Keeping this in mind, it is less difficult to understand why, in all countries where the system exists, the small farmers object to public efforts to consolidate their land. They are accustomed to the traditional layout of their farm land and each is convinced that his land is by nature, or by his treatment of it, worth more than the land he would receive in exchange under the consolidation process. Usually the quality of the soil, the slope of the land, its exposure, and the location of it with respect to the farmstead or the village are different for most of the lots belonging to one farm. Each consolidation project for one community involves a most bewildering and complex task of compensatory compromises. Consolidating all the strips of land into one pool, pulling up the boundary stones and plowing up the boundary and field roads are, to Europe's farmers, actions more radical than bloody revolution, because before their eyes it would change the whole environment in which they grew up. And in addition, land surveying is a costly and time-consuming task, and the proper classification and appraisal of land most intricate problems.

Yet what could be more wasteful of the farm worker's time, of draft power or more wasteful of land, than giving each fractional strip four boundaries which must not be plowed up, and on which only weeds are permitted to grow? The system of rights of way necessary to make all strips accessible without trespassing wastes more tillable acreage. A great deal of farm machinery, particularly tractors, cannot profitably be used on such strips. Farms of 10, 15, or 20 acres are frequently made up of as many or more individual

long "strips" scattered all over the fields of the rural community. Consolidation would invariably yield more land to the individual farm.

Most of the countries concerned have passed laws providing for procedures that will lead to consolidation, but in the interwar period work proceeded at snail's pace due to the technical and administrative difficulties involved. This work has stopped since war began, except in some occupied areas where the military administration has simply ignored property rights and has "consolidated" the land of whole communities by plowing it up into huge tracts.

Agricultural reconstruction must definitely embrace this type of institutional reform. Much technological progress can then be applied to the small farms and will hence improve their income.

The Reconstruction of the Tropical Plantations

From what has been said about the desirability of abolishing the large estates of Germany, Poland, Hungary, and Spain, it might be deduced that a similar process should apply to the tropical plantations in Africa, the Dutch East Indies, the Malay States, and the many Pacific islands. Such conclusions, however, are not warranted, for the situation in the tropics is not comparable to that of Europe, at least not now, nor will it be in the near future. In the European countries society has outgrown the feudal age. Education has made the peasants literate, and constitutional government has given them opportunity for political representation, even though in Germany and Spain it is being suspended for the period of political tyranny. Family farmers in Europe have the ability to make better use of the land than have the large estates operating with hired labor. The abolition of the large estates would not therefore lead to the disappearance of the production of those estates, but actually lead to an improvement in the output of crops and animal products, because there are enough sons and daughters of competent family farmers with skill, initiative, and the ability of management essential to settle the large estates.

In the tropics, the European plantations are enterprises growing special export crops. Many produce shrub and tree crops, among them rubber, tea, coffee, cocoa, cinchona bark (quinine), palm kernels, palm oil, and coconuts. These crops require heavy long-term capital investment. Reliable production for the world market cannot

be attained without extensive experimentation and research on plant pathology, disease and pest control, applied genetics, and plantation technology. The native peasants are not without traditional skills in horticulture and farming, but they are not sufficiently educated to understand or intelligently apply the efficient operational methods of modern plantations. Their most serious shortcoming, however, is the lack of the necessary enterprise to plan for supplying an export market. That natives who work for example on Dutch or British plantations do pick up some of the techniques and apply them to their own small farms is no proof to the contrary. The crucial question is whether, without the white man's plantation as a going concern, and without its initiative in production, processing, and marketing, these natives would carry on at all. As matters stand in tropical areas today, there is little evidence to support the view that they would.

Naturally it is impossible to do justice to the immense range of situations on and around all the plantations in all the tropics within the few lines that can be devoted to the discussion of this complex subject. We can hardly do more than present a few cautionary observations. In the long run it seems possible to make the proper adjustments in the native economy of certain tropical countries where average intelligence and enterprise are high enough to make the European or native management of plantations superfluous. Such adjustments would involve the adoption and execution of public policies giving the majority of native farmers ample facilities for vocational training and agricultural education, and establishing an effective agricultural extension service, experiment stations, and research centers. Decades would pass before real results along these lines became accomplished. While it is theoretically possible for the natives to produce all the tropical export commodities on family farms, such a change actually cannot be realized within the period of the future with which this book is concerned. The restoration of the plantations to their former export function will give employment and income to the hundreds and thousands of plantation laborers, such as the Chinese and the Tamil in the rubber and pineapple plantations of the Malay States.

Since the world needs the foods, beverage materials, the rubber, fibers, oils and the pharmaceutical produce of the tropical plantations, large-scale enterprises must be reconstructed at the earliest moment.

As soon as the areas are liberated and law and order restored, this work should not be difficult. There is no shortage of skilled managers and scientific personnel, nor a shortage of native labor nor of foreign capital. Shipping will be abundant. During an initial period all that can be produced will find willing and eager buyers. Whether this early demand will be sustained or not depends largely on the business conditions in the leading industrial countries and the development of their foreign trade, but it will also depend on the economic policy pursued by the plantations under the guidance and auspices of their governments. Low production costs and high quality products are some of the best weapons the tropical plantations will have in the struggle for markets, which, due to the wartime stimulation of substitute materials and sources, has become greater than ever. One of the surest ways of sawing off the branch on which the plantations are reposing would be the initiation or endorsement of monopolistic policies. The rubber, cane sugar, and coffee producers can undoubtedly promote international commodity agreements to the point of their adoption. If such agreements were successful, they would substitute the hard and cruel struggle of competition, which is fought by cutting prices and involves losses as well as gains, for a process of political bargaining and negotiating among nations that would secure a market quota also for the high-cost producers. This more comfortable and secure arrangement would inevitably lead to adjustments in importing countries whose consumers would vote for stronger support for their own domestic producers. In the case of rubber, this would mean more protection and more subsidies for the manufacture of synthetic rubber, more discrimination against the natural product, and heavier investments in research for improving the quality of the synthetic product. In the case of sugar it would mean more protection for the beet-sugar producers in all importing countries, and more public funds for improving the sugar yield per acre by better breeding and better processing technology. In the case of coffee it would mean the granting of high marketing quotas by the countries that could maintain or expand their production during the long years of war and the maintenance of higher import duties and excise taxes on coffee in the importing countries.

Lest it engage in digging its own grave, the reconstruction of the tropical plantation economy must be built on the principles of capitalistic enterprise and competition, because by its very nature it is a

capitalistic venture in the best sense of the term. It stands and falls with the freedom of capital movement, of investment and enterprise, and can prosper only in an expanding world of economic progress. In contrast, a world built around the principle of national economic security and social planning would not rely on tropical plantations as sources of supply, even if it should temporarily incorporate them in its institutional arrangements. In so far as tropical products would be desired, they would be purchased simply in whatever amount the native peasant and collecting economy would feed into the trade. Besides, the domestic production of synthetic substitutes would be fostered.

The reconstruction of the plantations and their resumption of world trade will be one of the best measures for assisting the native peasant economy in those areas. It will inject large amounts of purchasing power into the domestic market which will lead to an improved demand for peasant farm products, and will give many part-time plantation workers purchasing power for supplementary food, feed, fibers, and industrial goods.

The Possibilities of International Co-operation in Agricultural Policy

During the first four years of the war, the public in the United States and Great Britain has entertained increasingly optimistic notions about the possibilities of reshaping the world for the coming peace. Scores of spontaneous discussion groups were organized to consider foreign relations and foreign policy in the postwar period, and went to work in earnest. Magazine and pamphlet literature of these years bears eloquent testimony to the breadth and depth of this optimistic faith in the radically new departure of the great venture of the coming peace. Somehow this ideological fervor and enthusiasm for making the grade this time, and building an entirely different and far better world, seems to have had its roots in a subconscious feeling of guilt on the part of society in those countries for having let world affairs drift into chaos after the last war, and for having shunned the responsibility of action. The new emotion went in the opposite direction, assumed Allied omnipotence and omniscience, and ignored the delicate boundaries which divide the area of common and of divergent interest among the principal Allies, as well as

the respect due to the liberated nations and their right to self-determination.

Naturally the tide of lofty idealism began to subside as the expected early victory became more indefinite, as painful frictions developed among Allies with reference to postwar policies, and as the liberation of North Africa, and portions of France and Italy began to disclose the very complex nature of the problems awaiting solution after this war. The impossibility of remolding nations, their attitudes toward others and their relations with each other by following preconceived blueprints, however high their moral inspiration, or however idealistic and generous the ideals behind it, began to be evident.

By late summer 1944 it was obvious in England as well as in the United States that the public point of view was becoming more restrained, and that people were beginning to see the issues more clearly. Hard reality had been faced and recognized—civil strife in Yugoslavia and Greece; difficulties with Spain, Turkey, and Argentina; the claims of the French Committee of Liberation; the Polish, Baltic, and Finnish questions. Provided that this recognition of reality does not drift into the final stage of utter pessimism or cynicism, the prevailing attitude may be considered as a better premise for building a peace, and promises a more durable one.

Against this background we shall attempt to appraise the real prospect for international co-operation in matters of agricultural policy. During the period when the United Nations were convinced that it was their evangelical mission to reconstruct the world according to master plans, the discussion covered such phases as the complete reconditioning of agriculture, for example in European countries, under the aegis of agencies for international action. When the public learned about the establishment of schools of military government in the United States and Great Britain, recommendations for the immediate change of the basic agricultural institutions in occupied countries under military occupation abounded, although the armies left no doubt of their disinclination to meddle in affairs which inevitably must remain the province of the legitimate indigenous governments concerned.

Throughout the previous chapters we have stressed the need of building by international action the framework within which nations can live peaceably together and enjoy the freest economic and intellectual intercourse. We have also emphasized the great opportunities

for international co-operation in the fields of education, research, information, and farmer-co-operative associations. Although it may appear inconsistent with this profound belief, we consider agricultural policy as such, namely the responsible legislative and administrative work which shapes the institutions and conditions under which agriculture must perform, to be inevitably remote from the sphere of international action.

Yet this view is in harmony, and far from incompatible with what has been said about the need for bold international policies. There is no doubt that the people of this world, after this war, will continue to live within nations that are social, economic, and political units. This war has been fought largely in order to avoid the solution sought by the aggressors, which consisted of creating large continental blocks with supergovernments if not one totalitarian world government "for a thousand years to come." If, as seems certain, the majority of the former nations are restored, even a considerably modified sovereignty will by necessity restore to them the power to determine the living and working conditions for their people, including the rural population, and to determine the basic institutions which regulate the utilization of land (property in land, land tenure in general) and the rules for marketing agricultural produce. The United Nations are fighting this war regardless of the cost in life and wealth because they put the intangible principle of freedom above the possession of both. They cannot abandon this credo when victory is won, and must respect it for all nations. This means that the self-determination of domestic policies cannot be denied other nations, including the vanquished, beyond the requirements of military security.

If this be true, the only leeway that will be left for international co-operation in matters of agricultural policy lies in two directions. The interest of various nations concerning the future development of their domestic agriculture may be so parallel that co-operation with other nations becomes feasible. Or, it seems possible that while their agricultural interests conflict with each other, various nations may still find it expedient or profitable to arrive at a political compromise. Both cases are possible, yet both hold out little promise of satisfactory international action.

One reason for this skepticism is that the first case (that of more or less identical agricultural interests on the part of various nations) seems not to lead to international co-operation in its broadest sense,

but rather to the formation of certain blocks of nations for purposes of strengthening their bargaining position with other blocks of nations with different interests. Such blocks have existed, and will probably emerge again. However, they will be very unlikely to touch upon the very delicate political matters of their agricultural institutions, such as the distribution of land and the type of production.

By way of illustration, it is a not unpopular notion in the United States that something could and perhaps should be done by international action about the abolition of large estates in certain European countries. While we believe and have argued that the abolition of the large estates is necessary, we consider it fatal for such reforms to be executed under foreign pressure. One need only see how the South, after the defeat of the Confederacy, under pressure from the North solved the problem of slavery by establishing the slaves as hapless share-croppers, to realize the futility of such pressure. Or one may glance at the futility of Northern pressure today to force the franchise for the Negroes upon the recalcitrant southern states to gather some healthy skepticism about the wisdom or efficiency of reforms by outside pressure. Even if friendly governments should co-operate in tackling some of their common problems of agricultural policy, the responsibility would inevitably lie with each nation to carry out the programs.

The proper opportunity to influence agricultural policy in various countries lies in the construction of a world-wide organization that can function, under the FAO, with operating branches in several regions of the world. From working together, the most competent professional men, and eventually the nations they represent, can bring more powerful influences to bear upon national agricultural policies than all the other diplomatic approaches combined. The United Nations should, therefore, have the confidence and patience to rely on the process of friendly conference and consultation just as much as they are pledged to rely at home on the slow process of education and discussion, as opposed to the short-cut methods of totalitarianism.

CHAPTER X

Outlines of Reconstruction in Selected Countries

WHEN this war has ended, one of the conditions most vital to the revival of world trade in civilian goods will already have been restored. Ocean-going cargo vessels will be available in numbers and with a carrying capacity that in 1943 would have seemed most unlikely. The improved outlook is due to the success of the Allied campaign against the German U-boats and long-range bombers, and to American achievements in building and outfitting ships. Whether these vessels, built for war, are retained in merchant marine service or are replaced by more economical ones, plenty of shipping space will be in service during the era of peace.

While transportation by rail and highway in Europe will be badly dilapidated and require considerable time and capital for restoration, ocean-going shipping will be ready to take cargo anywhere. The Continent, whose indented shorelines are washed by ice-free seas in the north, west, and south and are spotted with most of the world's ports, will once again use ocean-going shipping as one of its greatest resources. Even in intra-Continental trade, cargo vessels carry bulk goods more cheaply from country to country and from one part of a country to another than do railroads. (During the interwar period it cost more to move grain by rail from Silesia to the big mills on the Rhine than to ship it by boat from Vancouver through the Panama Canal to the same inland ports on the Rhine.)

As the shipping of war materials and troops subsides and as nations dependent on their merchant marines for one source of income—i. e., Norway, Sweden, Denmark, Holland, Italy, and Greece—enter competition for overseas cargo, freight charges may decline even despite heavy demand. Insurance premiums will slowly return to prewar levels. The chief groups of agricultural exportable surpluses produced overseas will again move toward the Continental ports of entry. Grain and oilseeds will be the chief food surpluses

concerned. Many other farm and plantation products as well will be moved—among them cotton, rubber, tobacco, coffee, cocoa, and tea.

Chart XII illustrates the origin and destination of Europe's grain imports during the years 1934-37, and the movement of grain from the Danubian countries to other parts of Europe. It is true that for four or five years this trade was interrupted, and that the Continent managed without the overseas grain imports by adjusting production and consumption. But the adjustment was made only under the compulsion of the tight blockade, and at the price of turning the dietary clock back two generations in the industrialized nations. Economic pressure will be strong for the restoration of that prewar diet. To that end, first of all, more livestock must be fed, upon which depends heavy imports of grain. The grain available in the world market at low cost and in abundance and the product of extensive mechanized farming in semiarid regions is wheat. Wheat is one of the world's foremost food crops in foreign trade. If milled into white flour, it is split into a high-grade carbohydrate food and a high-grade protein feed especially suitable for dairy cattle. Since Europeans prefer bread made of a low-extraction flour, about 30 per cent of the wheat grain goes into the feed manger as bran and mill-feed.

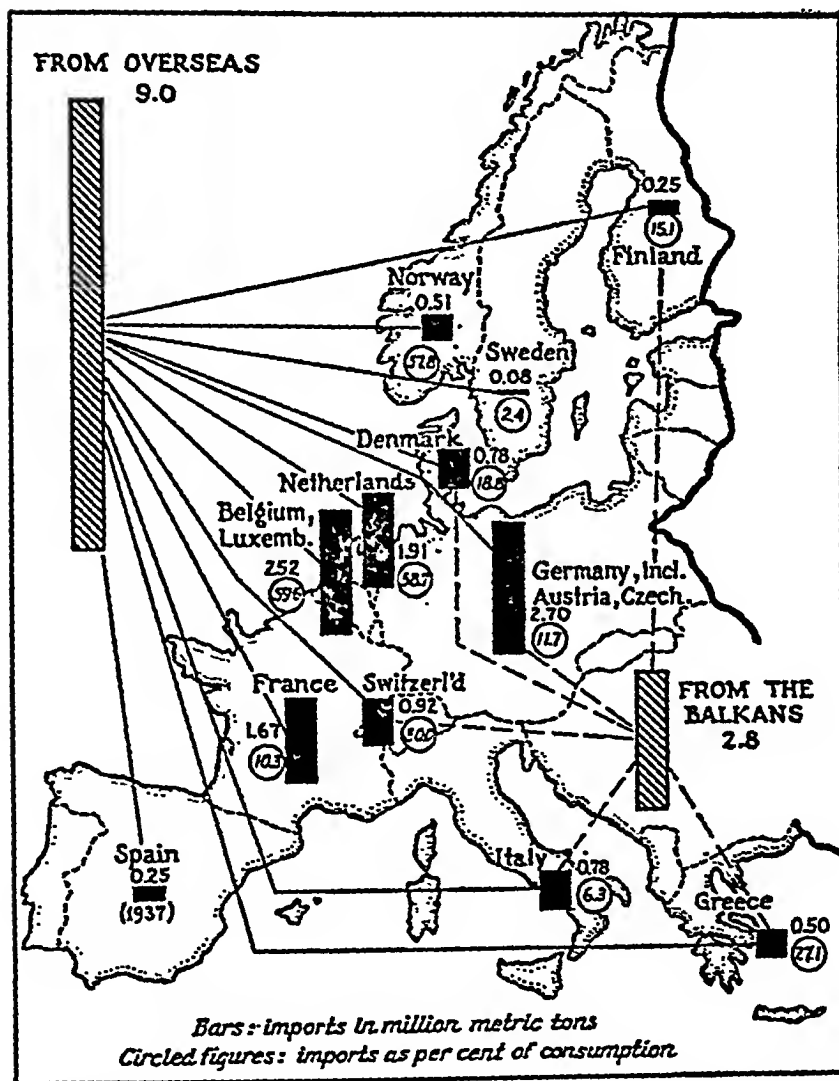
The world's wheat outlook for the grain year 1944-45 assures the availability of more than ample supplies to meet the possible maximum requirements, even if Germany's surrender came in early autumn 1944. The following tabulation indicates this position in millions of metric tons: ¹

Supplies			Available for Export and Stocks	
Country	Initial stock, July 1, 1944	New crop, 1944	Total	
United States	9.5	30.7	40.2	13.3
Canada	9.9	12.3	22.2	17.4
Australia and Argentina	11.2	9.1	20.3	15.0
		Total	82.7	45.7

¹ Helen C. Farnsworth, "World Wheat Outlook, July 1944," *Wheat Studies of the Food Research Institute*, XX, 5 (Supplement), July 25, 1944, p. 211.

CHART XII

ORIGIN AND DESTINATION OF GRAIN IMPORTS INTO CONTINENTAL EUROPE * (1934-37 average)



* From E. Woermann, "Ernährungswirtschaftliche Probleme Kontinental-europas," *Forschungsdienst*, Vol. XI, No. 3-4, p. 320.

This favorable situation is the result of the all-time record crop in the United States and the very large crop in Canada, combined with a heavy reduction in the record numbers of pigs and chickens in the United States.

The other major food import need for Europe is closely allied to the people's urgent desire to restore their prewar consumption of fats. These fats will come partly from increased animal production. Once enough grain is imported to fatten some 30,000,000 more pigs a year in Europe, much more lard, bacon, and other fat cuts of pork will become available, and feeding dairy cows wheat bran will yield more butterfat and milk protein. Moreover, an improvement in the supply of fats requires the resumption of heavy imports of oilseeds which, before the war, were the other principal commodity purchased overseas. Save for copra alone, which contains 60 per cent fat, most oilseeds contain far less oil than cake. Soybeans contain only 15 or 16 per cent extractable oil, 84-85 per cent of the weight being in the form of oil cake, a protein-concentrate feed.

As soon as the Continent begins to resume its traditional oilseed and vegetable oil imports, people in the importing countries will be able to buy more margarine, cooking oil, and shortening once more. The livestock farmers will obtain more oil cake to feed to their animals.

The shift from the long years of blockade to an era of renewed world trade will give many farmers an opportunity to adjust their farm operations to the use of overseas raw materials. At the same time, it must not be forgotten that the opening of the Continent to world trade will cast fear into the hearts of most of Europe's farmers, who will be apprehensive about the imports of overseas food products flooding their markets. Furthermore, they will be concerned lest the victorious powers institute policies to deprive the European farmer, in the face of overseas imports, of the protection of tariffs. In their very timely, lucid, and popular booklet on *Food and Farming in Postwar Europe*,² P. Lamartine Yates³ and Doreen Warriner,⁴ two of the most competent English authors writing on

² P. Lamartine Yates and Doreen Warriner, *Food and Farming in Postwar Europe* (New York, 1943), pp. 100-103.

³ P. Lamartine Yates, *Food Production in Western Europe* (New York, 1940).

⁴ Doreen Warriner, *Economics of Peasant Farming* (New York, 1939).

problems of Continental European agriculture, warn of this psychological situation which, if ignored or poorly dealt with, may from the very outset burden the peace with the hostility of all farmers.

These authors state that the protected peasants of western Europe, in countries such as France and Italy, will be afraid that pressure will be exerted to cut tariffs and force them out of business. And the poverty-ridden peasants of eastern Europe will fear for the security of their export markets, knowing that once before unrestricted competition drove prices of their products down to starvation levels. The authors strongly recommend a positive and constructive approach for the European governments: to win the support of their peasants to an adjustment by making it financially attractive for them to shift to the production of things in which they have a comparative advantage, thus making them less interested in and dependent upon protection for crops that can never yield them a reasonable livelihood.

This approach is in fact one upon which the present author built an agricultural program for the Weimar Republic in 1930,⁵ and which promised good results even in the protectionist atmosphere of Germany. On the question of feed imports, Yates and Warriner advise as follows: ⁶

There can be no question but that ultimately, as the farmers of France, Germany and Italy intensify their cultivation and become principally interested in livestock and horticulture, they will wish to import cheap feedstuffs on a large scale, just as British and Belgian farmers do. Equally, there can be no question, but that the governments of those countries, whatsoever they may be after the war, will strenuously resist any proposals which demand a sudden reversal of their traditional policies; for suddenly to remove, for instance, all import duties on grain would merely bankrupt many hundreds of thousands of cereal producers and, instead of giving them a chance to turn to dairying or some other farm enterprise, would drive them out of agriculture altogether. The essence of successful change is gradualness.

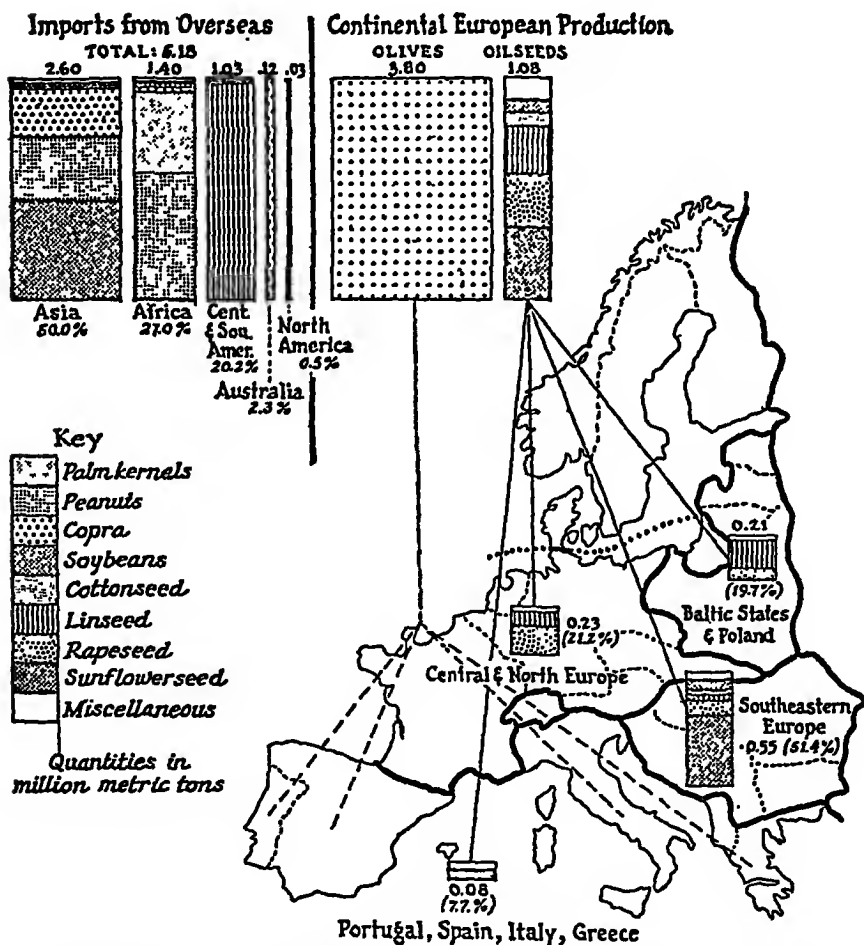
Chart XIII shows the origin of the Continent's prewar supplies of vegetable fats and the origin of the imported raw materials, and makes apparent the heavy dependence of normal Continental consumption of vegetable fats on imports from overseas. This is par-

⁵ Cf. Karl Brandt, "Beiträge zu einem Agrarprogramm," *Veröffentlichungen des Reichsverbandes der Deutschen Industrie*, No. 5, May 1930.

⁶ Yates and Warriner, *op. cit.* Quoted by special permission of the Oxford University Press.

CHART XIII

OVERSEAS IMPORTS AND DOMESTIC PRODUCTION OF OILSEEDS IN CONTINENTAL EUROPE *



* Adapted from E. Woermann, *op. cit.*, p. 321; additional data from *International Institute of Agriculture Yearbook*.

ticularly true if one considers that the large volume of olives used for the pressing of olive oil (750,000 tons) is almost entirely reserved for the Mediterranean countries, and that nearly all the oil from

imported seeds is consumed in the central and northern European regions.

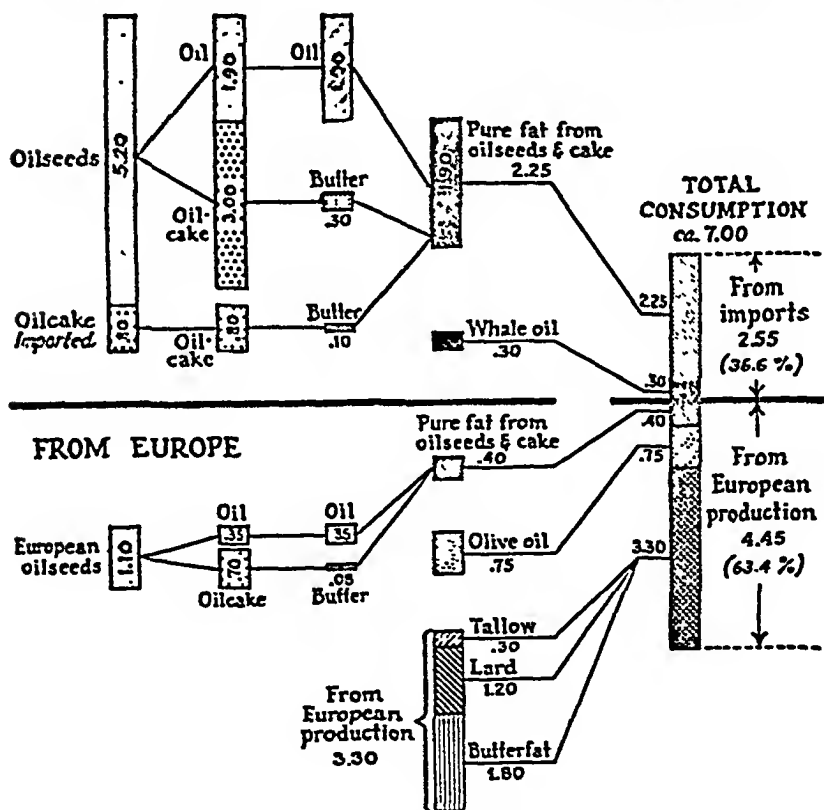
From Chart XIV can be seen the co-ordination of foreign and

CHART XIV

SOURCES OF CONTINENTAL EUROPE'S PREWAR SUPPLY OF EDIBLE FATS *

FROM OVERSEAS

*Data in
million metric tons*



* From E. Woermann, *op. cit.*, p. 322.

domestic fats in prewar European consumption. The diagram illustrates how the oilseed imports are tied into Continental dairy production.

We have shown earlier how the Continent expanded its oilseed acreage during the war. It may be assumed that the increased sunflower seed production in the Danubian Basin will be maintained, because sunflowers fit well into the badly needed rotation of crops. In most of the other areas the oilseed acreage will recede and imported oilseeds will resume their former place in the market. From what specific origins the Continent's oilseed supplies will come after the war is uncertain. Considerable changes in origin seem likely. Argentina has become a large-scale producer of sunflower seed and will probably export this product to Europe; and she will again be the world's chief exporter of linseed, as she was before the war. If Manchuria should become a part of Russia, the soybeans may not be available as in the past for shipments to Europe. Since the United States has increased its highly protected domestic fats production, it is possible that she will buy less copra and leave more of it to Europe. Egypt and Brazil will increase their cotton acreages, heavily curtailed during the war, and will export more cottonseed again, either to England or the Continent or both. Whaling will be resumed in the Antarctic. After a "closed season" of five years, the catches may be exceptionally large for a number of years, and some 600,000 or 700,000 tons of low-cost whale oil may become available for consumption in Great Britain and on the Continent. Since Japan and Germany are eliminated as whaling nations, the industry is confined practically to Britain and Norway. If Great Britain should decide to take all the whale oil, except what Norway wants for her own use, then more peanuts, cottonseed, and soybeans would become available for the Continent.

How much oilseed tonnage the Continent will be able to afford to import will depend on the prosperity of its export trade, the rate of employment in industrial countries, and the price of oilseeds. It seems not impossible that under the development of a real business boom in reconstruction, oilseed imports including those of linseed might soar to an annual volume of 5,000,000 or even 10,000,000 tons. Such high imports would be symptomatic of a shift toward the production of more animal products by Europe's farmers and of an increase in the per capita consumption of vege-

table fats. Increased feeding of animals would probably also revive the butter, bacon, and egg exports from the Continent to the British Isles.

To a certain extent the imports of oilseeds must be considered an import of fertilizer, since a part of their nutrient content reappears in the manure after passing through the animal intestinal tract, and thus aids the cultivation of crops. In China and Japan, where the principle of maximum production per unit of land and the lavish use of human labor and care for individual plants goes far beyond the European level, oil cake is applied directly as fertilizer. Europe's farmers have always found it profitable to feed any obtainable oil cake to their animals. There never was a surplus of feed protein sufficient to justify the direct use of oil cake as fertilizer, while relatively inexpensive commercial fertilizer is accessible to them in abundance.

The reconstruction of agriculture in Europe must enable the farmers to resume their prewar use of commercial fertilizer and to continue to increase it. In spite of destruction by bombing, the Continent will have at its disposal a substantial part of the capacity of its nitrogen-producing industry. Since the production of synthetic gasoline, which is carried on in these plants while the blockade lasts, will become unprofitable when natural gasoline becomes available, the plants can be returned to full use for nitrogen production. Moreover, when no explosives are needed and the munitions factories close down, all the nitrogen can be allocated to the manufacture of fertilizer. The destroyed plants will be rebuilt. The Continent's potash industry, on the other hand, is its most reliable fertilizer resource, during and after the war. That the mines will be seriously damaged seems unlikely. Hence it is primarily a question of getting management and labor back to work to provide the materials for operation and, most essential of all, to supply the railway facilities to move the bulky freight. Phosphates must come from the United States, Algeria, Morocco, and Madagascar.

Chart XV shows the grain yield, the use of nitrogen, phosphates, and potash per hectare in prewar years for different countries, as well as the density of livestock per 100 hectares of land in agricultural use. The high degree of co-ordination among the three indicators of the intensity of land use is significant. Naturally there is more behind the data than a few words can explain. The fertilizer,

for example, is used more for truck crops and hoe crops than for grain. The extremely high application of all three types of fertilizer per acre in Holland is explained by the large vegetable acreage. The low use of fertilizer in Switzerland is explained by the small proportion of arable land and the predominance of mountain-grazed cattle. The livestock density measures intensity of land use as well as the wealth in operating capital on farms. Chiefly, the chart is presented to illustrate the low yield, low input, and low capital equipment of farms in the east and southeast in comparison to the rest of Europe.

It seems probable that after this war the geographical distribution of the intensive use of fertilizer will remain roughly what it was in prewar years. It is questionable whether Germany will soon be able to return to her previous heavy fertilization of crops, and questionable whether the territorial arrangement of the coming peace will interfere with the pattern of intensity of farming in central Europe.

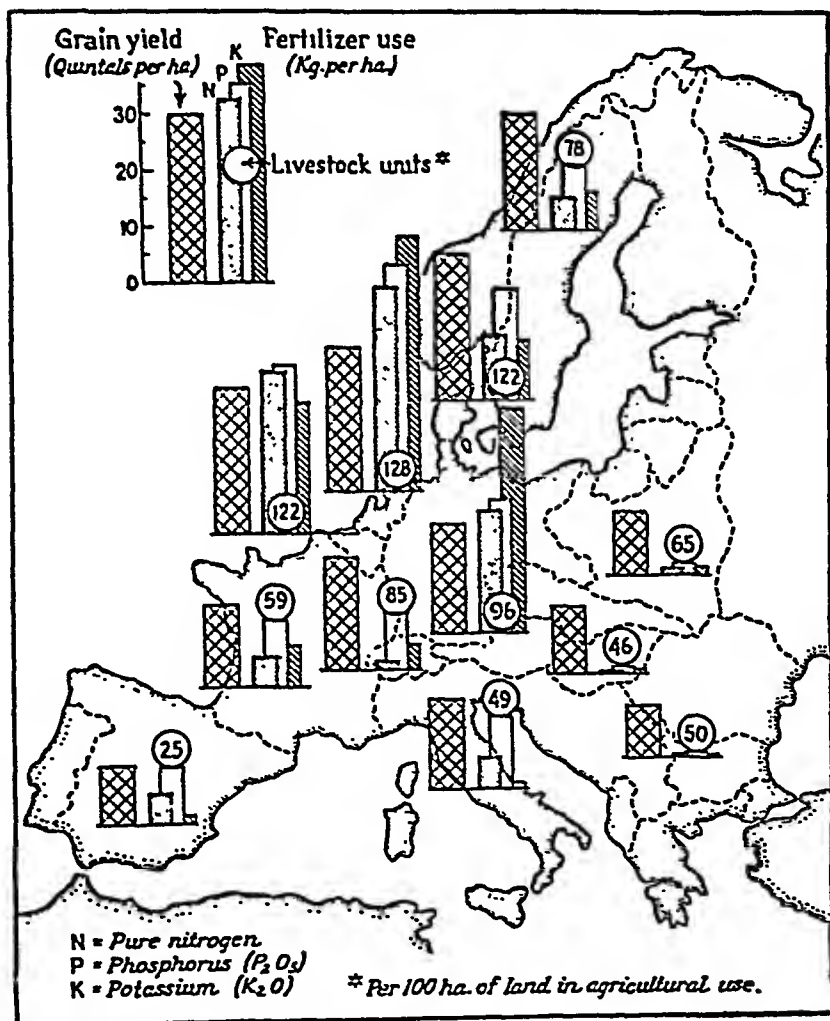
Once the imports of grain, oilseeds, and fertilizer flow again from overseas and the acreage of oilseeds declines, the acreage thus set free will be used for feed grain and fodder crops, provided that industrial reconstruction and re-employment permit the strong expansion of meat, egg, and milk consumption, and thus an expansion of livestock herds. The production of vegetables will be adjusted to a peacetime demand, with a lower output in carrots and cabbage. Potato production may be maintained, but a much larger proportion of it will be shifted to fattening pigs.

As more tropical fruits become available, some part of the urgent demand for domestic fruit will disappear. The availability of more table fats will reduce the demand for fruit jams to the extent that it was expanded when butter and margarine rations were short. Yet it may be assumed that a high rate of employment in the industrial countries will not only induce the people to absorb the domestic output of apples, pears, prunes, cherries, and small fruit; but beyond that to consume a large volume of citrus fruits, apricots, peaches, grapes, and raisins. The beneficiaries of such demand would be the Mediterranean and lower Danube basin.

Within their inventories the Continent's farmers will try to restore first their draft power, which means horses for the most part. Since the tractor saves manpower, and manpower will still be rela-

CHART XV

GRAIN YIELD, FERTILIZER USE AND DENSITY OF LIVESTOCK PER HECTARE IN CONTINENTAL EUROPE *



* Adapted from E. Woermann, *op. cit.*, p. 325.

tively abundant, horses and even cows will continue for a long while to be the chief source of draft power on Europe's farms, particularly if prices of tractors, spare parts, and gasoline remain as high as they formerly were in most countries. Small farms composed of many small fields constitute another serious hindrance to tractorization. Tractors will still be used in Rumania and Hungary, in Sweden, Germany, France, Czechoslovakia, and Italy, but the rate will hardly exceed modest limits of at best a few thousand more tractors a year in each of these countries.

Much more important progress will be made in the many additions to farm equipment, for which the Germans have coined the term *Aufrüstung des Dorfes*, which means "mechanical armament of the village." The economic proportions which this process may assume can be grasped by the fact that the already very well-equipped German farms absorbed during the five year period 1934-39 a total of 2.3 billion marks' worth of machinery and implements, or an average of 460 million a year, but that in 1937 and 1938 the rate of spending on these items had reached a peak of nearly 600 million marks a year.⁷ Even if no mechanical power is added, the equipment with better tools and man- or horse-powered machines on many millions of family farms will improve the productivity of human labor.

The greatest emphasis in the work of reconstruction in Europe must be placed on the energetic continuation of the electrification of the rural areas. The safe, effective, and convenient illumination of houses, barns, and bins, and the opportunity to do dozens of chores—washing, pumping water, chopping hay and roots, grinding grain, breaking oil cake, lifting and conveying all sorts of crops into high barns, threshing with the aid of electric motors or steaming potatoes overnight in automatic boilers, or ironing with electricity—mean a much greater change in the actual living and working conditions for family farmers than does the introduction of the tractor and the truck. Electricity makes life easier for the most overworked people on farms—the women, who pay for it dearly by ill health, premature aging and a short life span. Sources for inexpensive electric power abound on the Continent. Abundant deposits of bituminous coal and lignite, and water power sites combined, constitute a sufficient reserve capacity to supply every European farm with

⁷ *Die Deutsche Volkswirtschaft*, Oct. 1, 1943, pp. 879-880.

current. The great density of settlement involves a relatively low investment in the distributive system, while the combination of urban and rural consumption offers the opportunity for a better balancing of the load of the power plant during the 24 hours of the day.

It must be realized, however, that to equip millions of farms with electric motors and the chief labor-saving machines and appliances requires a vast amount of capital, which the farmers will not be able to save quickly. Thus the rate of progress in electrification will depend on the profitability of farming in the period of reconstruction, and the possibility of financing the purchase of electrically driven appliances by credit. Hardly any other field of economic development—not even that of railroads—better lends itself to an approach of bold central planning than does the electrification of entire rural districts. The cost of operating the power plants depends essentially on what rate of utilization of the plant capacity can be attained. The demand for current reacts to many factors. Chief among them are the price charged per kilowatt hour, the price of the appliances, and the advantages gained from shifting to electrical operation. A bold investment policy makes it possible to anticipate the financial stage of slow development which in time will lower the price of the current. This can be done by equipping most of the potential consumers at once with installations and all appliances, and obliging them to buy for a minimum number of years a certain amount of current at fixed minimum rates. The investment could be made by the power company as a part of its general plant investment. Interest and amortization would have to come out of the general revenues from sales of current. The great advantage of such a procedure is that it would make possible the reduction of the costs of all installations and appliances by placing the orders for the wiring of all buildings as well as the orders for appliances with the lowest bidders, by avoiding all wholesale and retail costs, and by the immediate boosting of the current consumption.

Such a policy is compatible with private initiative and competition, no matter whether the power companies are privately or publicly owned and managed, or both. A similar approach is possible and advisable with respect to other improvements on the family farms, wherever certain types of equipment are necessary. A special hygienic and modern type of chicken coop, cold frames, green-

houses, automatic hog feeders, incubators, and similar items can be introduced much faster on a large scale if, by some collective action—either private or public—the risk factor for the producer and the trade can be eliminated; and if, at the same time, the overhead costs of production and the costs of distribution can be reduced substantially by placing orders on a large scale, as the experiments in this direction in several European countries have convincingly demonstrated. Such an organization of effective demand is frequently capable of reducing the price to the farmer by as much as 30, 40 or more per cent.

Policies which permit costs to the rural people to be lowered should also be applied to the telephone service. It costs much more to connect farms and to service their telephones than to accommodate urban people. Yet what is a convenience to most urban consumers is a professional necessity to all farmers, and often even a device protecting life and wealth. Hence the public would seem justified in enforcing a policy which would equalize the costs between city and country. In Latvia, the government equalized the telephone rates for farms and city dwellers with the result that by 1930 even the smallest farm and all the new farms which replaced the large estates actually had telephone connections.

In several directions the farmers must be assisted in the task of reconstructing agriculture by means of public policies. Land reclamation and amelioration are feasible in many countries. Large parts of Europe are still handicapped by insufficient drainage, despite heavy investments in tile drains, ditches, and pumping systems. In the northern and central European areas of low elevation, many extensive swamps with decomposed alluvial muck soils merit efforts to reclaim them by the creation of adequate artificial drainage. Along the sea and river marshes of the Channel, the North Sea, and the Baltic, large tracts of good land submerged by shallow tide-waters lend themselves to reclamation by the construction of dykes. In southern Europe much arid and fertile land can be brought into production by irrigation. All such projects require either semipublic co-operative associations or other forms of incorporation, as well as long-term low-interest credit (e. g., 18 or 20 years at an interest rate of 2 or 3 per cent). Reclamation of this character would give highly welcome leeway for resettling farm families whose acreage